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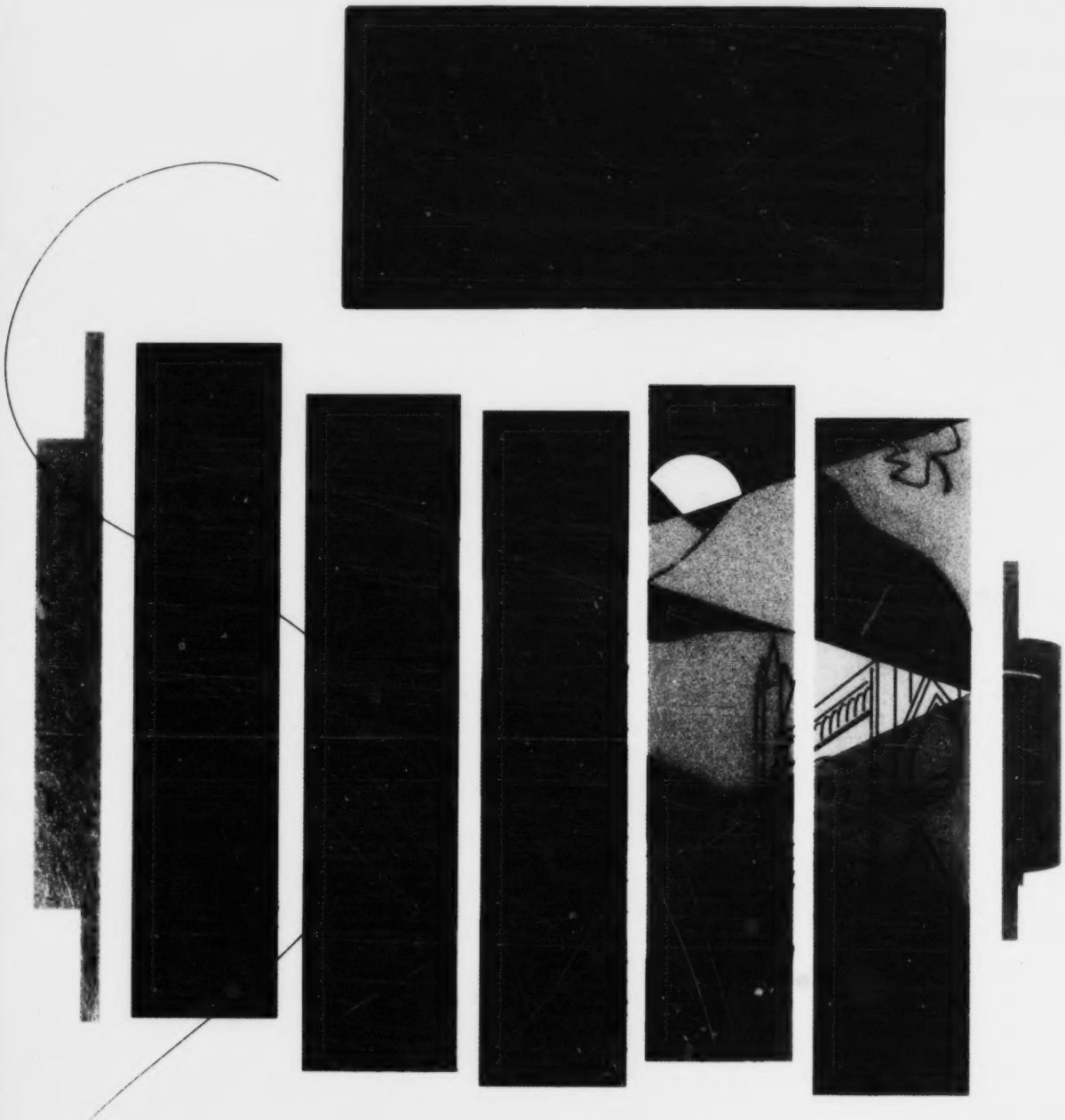

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Research Report

A Review of the Literature on Personal/
Emotional Need Factors

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A Review of the Literature on Personal/Emotional Need Factors

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Overview

The personal/emotional domain of the Correctional Service of Canada's (CSC) risk/need assessment protocol represents a broad grouping of criminogenic needs that are considered to be predictive of criminal and recidivistic behaviour. The purpose of this review is to examine the available empirical literature which documents the link between personal/emotional need factors and criminal and recidivistic behaviour. Included in the review is a descriptive examination of how offender populations differ from general populations on the various personal/emotional need factors. The review will also attempt to identify personal/emotional need factors which show particular promise for predictive purposes and those factors which appear to produce only weak predictive results. The review has the potential to assist CSC in refining its assessment protocol for the assessment of criminogenic needs within the personal/emotional domain.

Personal/emotional factors constitute an important domain within the research which attempts to examine the causes of criminal behaviour. Researchers have contributed to this area through two main avenues of research. First of all there has been a great deal of predictive and psychometric work devoted to personal/emotional factors by researchers who have searched for the "causes" of criminal behaviour and the identification of "risk" factors which appear to maintain criminal lifestyles. The second avenue of research has involved the treatment realm, whereby researchers and clinicians have attempted to measure their success by monitoring changes in the personal/emotional needs of criminal justice clients who have participated in their treatment programs.

The personal/emotional needs dimension is multi-faceted. Included among the indicators is a large number of items which attempt to assess **cognitive deficits**. For example, problem-solving, interpersonal relationship skills, inability to understand feelings of others and narrow thinking. These factors have been examined in a number of studies of delinquent behaviour and have been the focus of many treatment programs designed for offenders. Another large proportion of personal/emotional need items fall within the cateogory of **behavioural problems**. These include behaviours that are likely to result in negative outcomes for offenders including impulsivity, risk-taking, aggression, anger, frustration tolerance, gambling, and other problem behaviours which might serve as criminogenic needs. A third category refers to other **personal characteristics** of offenders which may increase the likelihood that the offenders will be involved in criminal behaviour or other negative outcomes that may promote criminality. These include personality dispositions (e.g., neuroticism), behavioural preferences (e.g., inappropriate sexual preferences), and mental status characteristics (e.g., deficiency, disorder).

The personal/emotional needs domain has been found to possess considerable predictive power within the current risk/needs assessment protocol used by CSC. There has also been evidence from other offender samples that personal/emotional factors are important. For example, Andrews et. al. (1986) demonstrated that "emotional/personal" indicators (parallel to the emotional/personal domain of the Level of Supervision Inventory – LSI) were among the best predictors of recidivism. Their study examined the predictability of a series of offender characteristics in relation to recidivism in a sample of Ontario probationers. The range in magnitude of significant r's was .15 to .31 among 10 emotional/personal indicators (average r = .19). Only 2 of the 10 personal/emotional indicators failed to predict recidivism at statistically significant levels.

With respect to evidence on the predictability of risk/need indicators for federal offenders, Motiuk and Brown (1993) reported on the correlations between release suspension and Community Risk/Need Management Scale items. Of 11 items within the personal/emotional domain, 6 of the items were significantly correlated with suspension at six-month follow-up for the sample of 604 adult offenders who had been released from federal institutions in the Ontario region. The majority of significant items exhibited correlations within the .2 range. Cognitive deficit items showed the highest levels of correlations with suspension within the personal/emotional need items that were examined. While the study provided important evidence of the predictability of the personal/emotional domain, there was also sufficient evidence to suggest that not all of the items within the domain are predictive of recidivism.

As noted above, the personal/emotional domain represents a very broad grouping of dynamic factors which are believed to be criminogenic. In terms of the range of criminogenic needs presented by federal offenders, the personal/emotional category represents a high frequency domain. In fact, among male offenders from a large 1996 sample of federal offenders (n=11,541), only 9% were assessed as having no problems within the personal/emotional need domain (Motiuk, 1997). A total of 27.9% of the male sample has "some difficulty" and nearly two-thirds (63.2%) had "considerable difficulty" within the domain.

The personal/emotional domain was also a high need area for many federal female offenders (n=182). Only 12.1% of female offenders had "no difficulty", 52.2% had "some difficulty" and more than one-third had "considerable difficulty" within the personal/emotional needs domain.

The high frequency with which needs are assessed within the personal/emotional need dimension suggests that the grouping may be overly broad in focus and that a more streamlined categorization of the indicators would be more helpful. For example, regrouping of personal/emotional items may produce a more satisfactory categorization for the purpose of treatment targeting. Many of the individual personal/emotional need factors are already the focus of specific treatment programs (e.g., problem-solving, sex offenders treatment, anger management, etc.). A regrouping of items into more than one category may provide for more specificity in highlighting the unique treatment needs identified though the assessment process. The current review will provide relevant information for assessing whether or not regrouping may improve assessment within the personal/emotional domain and provide some guidelines for grouping of existing items.

Methodological Issues

The PsychLit bibliographic software was used as an initial method of searching for relevant studies that have examined the items from the personal/emotional needs domain. Key-word searches focused on variations of the wording of the particular indicators (e.g. risk-taking = risk-taking, venturesomeness, thrill seeking, sensation-seeking, etc.). We also narrowed our searches to studies focusing on criminal samples, including both adult and juvenile offender groups. In addition to the computerized bibliographic search routines, we used cross-referencing techniques (from literature reviews and other known sources) to assemble a body of literature relevant to the factors contained in the personal/emotional domain of CSC's risk/need measure. Overall, this approach resulted in the identification of several hundred relevant references. We focused our search for new research on the content areas between the years of 1975 and 1997. This provided an ample body of sources but also ensured that other salient work from earlier years was identified from more recent material. The available references were then reviewed to determine their utility in addressing the questions raised by the scope of work for the proposal.

Given the broad category represented by the personal/emotional domain, the task of completing a literature review of relevant studies for all personal/emotional domains was a major under-taking. It was necessary to limit the number of studies selected for initial review. Following our initial review, we eliminated a number of additional studies that were not sufficiently on-target, or simply repeated findings presented in studies having greater methodological strength. In order to retain the comprehensiveness of the review while balancing the limitations imposed by time constraints, it was impossible to produce an exhaustive search of the literature. The review that follows represents our best judgement about the studies that provide the highest quality information about various personal/emotional need factors examined.

The ideal method for completing a review of the personal/emotional domain indicators would be to perform separate meta-analyses of the predictability of each indicator. Obviously, this approach would require an expanded time frame to accommodate the planning, search, and extensive analysis required. However, this review provides an excellent alternative to a more rigorous approach represented by meta-analytic techniques. In selecting studies to include in the analysis we carefully assessed the quality of the methodologies presented, the relevance of the research to the objectives of the study, and the contribution of findings to the promotion of innovation within risk/need assessment technology. We have identified a number of studies which provide corroborative evidence for the predictability of constructs. When faced with a choice of several studies showing the same findings, we have chosen the most typical study to feature in the review. In addition, we have attempted to show the variety of methodological approaches that have been used (e.g., measurement approaches and research design) and the diversity of offender samples employed. In the course of reviewing the studies, we also attempted to identify and include studies that were based on samples of Canadian federal offenders. Generally we located a large number of studies based on Canadian samples and we also found several relevant studies based on Canadian federal offenders.

Most of the literature we examined for this review falls within the following categories:

- **Correlates of Criminal Recidivism – Predictive**. These studies are normally prospective studies, sometimes conducted within the context of an evaluation of a treatment intervention. The constructs (e.g., problem-solving skills, self-esteem) are measured at time 1 followed by a measurement of adult criminal or juvenile recidivism at time 2. The length of follow-up periods vary from study to study but normally refer to periods of at least 1 year. We believe these studies are considered most relevant to the current review and provide the most convincing evidence to address the questions being posed. Therefore, when a number of alternative studies were available, we generally feature the most recent studies that fall within this category.

- **Correlates of Criminal Recidivism – Criminal History**. These are cross-sectional studies where the measurements of the predictors are normally combined with outcome measures based on criminal history information from file sources. In some cases, the measure of criminal history is based on self-report methods. Frequently, the self-report studies rely on non-offender samples (e.g., college students, general population groups). Hence, these studies which examine the relationship between volume of criminal history and the constructs of interest supply post-dictive evidence pertinent to the review. The evidence provided from these types of studies is less convincing than evidence provided from prospective studies. Nevertheless, information from cross-sectional studies is helpful when more rigorous empirical information is not available.

- **Studies Demonstrating Criterion Validity using Extreme Groups Comparisons.** A large group of studies dealt with demonstrating a link between criminal history and the various constructs by comparing offenders and non-offender groups. The sub-samples of offenders and non-offenders are identified through a variety of sources. Generally, the sampling strategies are best described as availability sampling. An example of this type of study might compare measures of one of the constructs (e.g., anger management skills) taken from a college sample with measures derived from a group of incarcerated offenders. The data from these studies cannot provide helpful information for assessing the link between criminal behaviour and the constructs under investigation. However, they do provide important descriptive information with respect to the relative occurrence of the particular traits/characteristics (e.g., neuroticism, racist attitudes) within offender populations.

- **Treatment follow-up Samples**. Some of the existing studies address one or more of the target constructs within the context of an evaluation of a correctional treatment program. Some of these studies provide indirect evidence of a link between criminal recidivism and the constructs. For example, a program designed to increase anger management skills might provide evidence of a link between anger management and recidivism by demonstrating lower recidivism for a treatment (versus control) group. The evidence provided by these studies is obviously limited in comparison to some of the other methods enumerated above.

The majority of studies which provide empirical evidence concerning recidivism and the constructs under study are based on juvenile populations. Our literature search has led to the conclusion that there is a paucity of predictive studies of recidivism which are devoted specifically to examining adult criminal behaviour in relation to many of the personal/emotional factors. However, for most of the constructs, a number of studies based on juvenile samples could be identified. Some of the delinquency studies provide prospective evidence of a link between childhood and adolescent characteristics and later criminal behaviour. Whenever possible we relied on data derived from adult offender populations to address the questions of the review. However, in many cases there was not a sufficient number of adult samples to make an adequate assessment of the predictive significance of the constructs. In these cases we incorporated the juvenile data into our analysis to corroborate general findings established from the limited number of adult-based samples.

Within the adult offender samples we examined, we located a number of studies based on sub-samples of offenders. For example, many of the studies which are relevant to assessing the predictive validity of the constructs are based on samples of substance abuse offenders. Sex offenders and violent offender are also the focus of a number of pertinent studies. There are fewer samples which focus exclusively on property offenders. While the sub-type offender samples pose some limitations on the assessments that can be made, the review will attempt to assess the biases that might be involved in the use of such

specific samples. While this situation occurs relatively frequently, it should be noted that the body of literature also contains a large number of studies based on general populations of offenders.

Another category of sub-sampling concerns criminal justice processing variables. Criminal justice settings vary considerably from incarceration, conditional release, to probation. There are also non-criminal justice samples of individuals who self-report on their criminal behaviour over a follow-up period. Hence, the analysis contained in the review pays careful attention to the criminal justice settings associated with the studies.

Despite the variety and limitations of the populations included in the body of literature we have identified, we believe the literature is sufficiently extensive to make adequate assessments for the majority of personal/emotional need factors included in the review.

In our literature searching we focused on each of the personal/emotional indicators included in the personal/emotional needs domain for CSC's risk/need assessments. To simplify the review process, we frequently combined (or failed to differentiate between) "sub-components" and "indicators". It should also be noted that in many cases the individual need indicators were too specific to furnish definitive information about the constructs. However, in the majority of instances the construct area could be encompassed within a broader category of a principal component or sub-component. For example, while there were few studies that focused specifically on "unable to generate choices", a larger body of literature addressed "problem-solving" skills more generally. In such examples we found a broader definition to replace an indicator or series of indicators. For example, the construct of "empathy" is not mentioned specifically among the indicators in the needs assessment protocol. However, there are many personal/emotional need indicators not associated with a specific body of predictive research (e.g., feels especially self-important, disregard for others)

that were easily subsumed under the "empathy" category. Self-esteem also surfaced as a construct that was not specifically enumerated as a need indicator, but represented a large body of research that was relevant to the "Self-concept" principal component.

Our review of the research and organization of the reporting on results also led to reassignment of some indicators to alternative principal components or sub-components. For example, "gambling" for which there is not a large body of predictive studies, was combined with "risk-taking". We describe these reassignments as we report the results of our review. In our conclusion and recommendation section we provide more detail on how the personal/emotional components might be organized to represent a more parsimonious classification of the constructs.

It is important to reiterate that for many of the specific indicators we failed to find a strong body of literature for the purpose of establishing the criminogenic need status of the given item. However, this is not meant to suggest that the indicator would not be helpful or relevant to the measurement of a sub-component. For example, while we found studies on the predictability of the indicator "mentally disordered in the past", we did not identify corresponding studies relevant to "mentally disordered *currently*". Again, this does not suggest that the latter item would not serve as a valid indicator for assessing mental disorder. We understand that in many cases the indicators are simply "indicators" and were not meant to be viewed as "constructs" *per se*.

A final note on the organization of components and indicators relates to the classification of some constructs under the personal/emotional domain. In particular, the Socio-cultural sub-component of "Self-concept" posed a number of difficulties both in terms of our search for relevant research and the inclusion of this category within the personal/emotional domain. We argue that the indicators of ethnicity and religion "as problematic" are best grouped under the "Attitudes"

domain where similar indicators already exist. In addition, we believe that "problematic family ties" are already well covered under the "Marital/Family" domain. We also had difficulty incorporating "gang membership" under the "socio-cultural" sub-component within the personal/emotional needs domains. We argue that the "gang membership" indicator is essentially covered under the "Associates/Social" domain where it has already been included as an item. For this reason, we have not included these four "reassigned" socio-cultural indicators in the current review of personal/emotional need factors.

The following sub-categories were used as a method of organizing the review and presenting the findings. Note that while we list sub-components and indicators together, our organization generally corresponds to the protocol described in the Case Management Manual. Some changes in the ordering of categories will be noted. In the case of reassignments, we list the indicators under their original principal/sub-components and again under the reassigned category. In our review of the research, reassigned items are reported under their respective new principal/sub-component categories.

Principal Component	*Sub-Component/Indicators*
Self-Concept	**Personal** • Feels especially self-important (reassigned to Empathy) • Physical prowess problematic • Self-esteem (new indicator)

Cognition	**Cognition**
	• Impulsivity
	  • Manages Time Poorly (reassigned from Behavioural-Coping)
	  • Non-Reflective (reassigned from Behavioural-Self-Monitoring)
	  • Conscientiousness (reassigned from Behavioural-Conscientiousness)
	• General Problem-Solving (new indicator)
	  • Unable to recognize problem areas
	  • Unable to generate choices
	  • Unaware of consequences
	  • Goal setting is unrealistic
	  • Narrow and rigid thinking
	• Interpersonal Problem-Solving
	  • Poor Conflict Resolution (reassigned from Behavioural-Coping)
	• Empathy
	  • Self-importance (reassigned from Self-Concept)
	  • Disregard for others
	  • Socially unaware
	  • Incapable of understanding feelings of others
	  • Manipulative (reassigned form Behavioural-Manipulation)

Behavioural	**Assertion** • Assertiveness Skills

Neuroticism

- Worries, Anxiety (new indicator)

Aggression

- Aggression
- Anger (new indicator)
- Hostility
- Frustration Tolerance (reassigned from Behavioural-Frustration)

Risk-Taking

- Risk-taking
- Sensation-seeking (Thrill-seeking)
- Gambling (reassigned from Gambling)

Coping

- Copes with stress poorly
- Poor Conflict Resolution (reassigned to Cognitive-Interpersonal Skills)
- Manages time poorly (reassigned to Cognitive-Impulsivity)

Sexual Behaviour

Sexual Behaviour

- Dysfunction
- Identity
- Preference (e.g., inappropriate)
- Attitudes

Mental Ability

Functioning

Mental Health

Mental Health

- Disordered

Interventions

Interventions

- Assessments
- Medication
- Psychological/Psychiatric
- Hospitalization
- Programs

Self-Concept

The self-concept principal component is defined by two personal indicators: "feels especially self-important" and "physical prowess problematic". The concept of self-importance (also narcissism and egocentricity), although infrequently mentioned in the criminological research literature, appears to be related to the construct of empathy. Self-importance implies a selfish absorption in one's own needs without regard or interest in the needs of others. For this reason, we have incorporated this item within the "empathy" construct reviewed below. With regard to physical prowess, Andrews and Bonta (1994) have suggested there was some early interest in the concept of physical stature in relation to criminality in early research on offenders. For example, the mesomorphic body type was regarded as representing a risk of delinquent behaviour. More recent references to this concept are rare in the research literature.

However, another related component of self-concept for which a larger body of literature exists, is the construct of self-esteem. In many respects, individuals who have an over estimation of their importance, or who overestimate or emphasize their physical prowess may be regarded as falling at the high extreme of self-esteem. We have included a review of the self-esteem literature, not only because it can be related to these other notions of self-concept. However, self esteem is regarded by many as an important correlate of criminal behaviour. Popular conceptions about crime and personality frequently suggest that self-esteem plays a causal role in the development and maintenance of delinquent behaviour. We recognize that self-esteem is not currently included as an indicator within the personal/emotional needs dimension. However, some correctional professionals may argue for the inclusion of the construct as a criminogenic need. For this reason, we review the evidence regarding self-esteem and criminality below.

Self-esteem

Self-esteem has frequently been viewed as an important target of intervention within criminal populations (Bennett, 1974). Many program designers have assumed that self-esteem is an important outcome and that a side-benefit of their offender programming efforts is an increase in this highly desirable personal state (Field, 1985). An interesting research project reported by Bryson and Groves (1987) illustrates the perception of many correctional program designers regarding offender self-esteem. Assuming that self-esteem was an important correctional outcome, the authors attempted to identify a series of activities that increased prisoner self-esteem. They examined the differential correlations between participation in various types of recreational activity (e.g., cards, weight-lifting, jogging, horseshoes, religious activities, etc.) and prisoner self-esteem. Although difficult to interpret, a sample of their findings suggested that for felony offenders participating in billiards, competitive weightlifting, horseshoes, basketball, and religious services were positively related to self-esteem, while card playing was negatively correlated.

There has been some research on the relationship between self-esteem and criminality. However, generally there have been inconsistent findings in studies which have examined the relationship between self-esteem and recidivism in follow-up studies of offenders. In their major review of predictors, Ross and Fabiano (1985) identified only a small number of studies reporting lower self esteem in offender samples prior to 1980. However, they argued that the link between criminality and self-esteem may operate through locus of control. Since many offenders are externally oriented in their locus on control, self esteem is likely to reflect a lack of belief in their ability to affect change or have control in their environment (i.e., internal control).

At the same time, there is other evidence suggesting that self-esteem may not be an operative factor in criminal behaviour. For example, Gendreau, Little, and Goggin (1996) reviewed a large number of studies which examined the link between recidivism and a variety of measures of personal distress. Low self-esteem was included as one of the measures within this category which also included such measures as depression, neuroticism, anxiety, and personal inadequacy. Gendreau and his colleagues reported an overall weighted correlation (r) of .05 based on a combined sample of 19,933 offenders and 66 separate coefficients for recidivism and personal distress. The correlation was significant at a minimal level ($p < .05$) for this large sample. While low self-esteem was not the only measure included in the personal distress category, the findings from this major meta-analysis certainly do not suggest that this construct is a major predictor of criminal behaviour. A meta-analysis of recidivism among sexual offenders has also been conducted recently by Hanson and Bussière (1996). The authors noted that self-esteem was unrelated to recidivism in the studies they reviewed.

An important study conducted by Bynner, O'Malley and Bachman (1981) raised questions about the assumed link between self-esteem and delinquent behaviour. Using data from the major "Youth in Transition" panel study, they examined the link between self-esteem and delinquency over a follow-up period of 5 years. At each of three measurement times, both self-reported delinquency and self-esteem were measured. This allowed the researchers to conduct a sophisticated path analysis of the relationship between the two variables for a large national sample of high school boys (n=1,471). Using data from multiple time points the authors were able to examine the relative impacts of increases and decreases in self-esteem over time. In addition they were able to examine direction of causality between the two measures (i.e., low self-esteem increases delinquency versus delinquency promotes low self-esteem) while controlling a variety of independent variables (school achievement, SES). Their conclusion

was that there were very weak paths between self-esteem and delinquency with very little evidence to suggest that low self-esteem increases the likelihood of participation in delinquent activities. In fact, the path analysis suggested that involvement in delinquent behaviour produced some increases in self-esteem among the boys who initially possessed lower self-esteem.

There have been some studies addressing the issue of self-esteem and criminal behaviour in adult samples, and in particular, there are a number of Canadian contributions in this area. One study by Bennett (1974) involving a sample of American parolees, however, is frequently sited in the literature. In this study the relationship between recidivism (as measured by a 9-point parole outcome scale ranging from arrest free to new felony commitments) and pre-release self-esteem was examined using a sample (n=107) of releases from a maximum security facility. Outcome was measured at six months, 12 months and 24 months. Self-esteem was significantly correlated with positive parole outcomes at the 6 month ($r = .22$) but unrelated at the12 month ($r = .13$) and 24 month follow-up points (.03). Despite some evidence of a relationship, Bennett concluded that self-esteem was weakly correlated with parole outcome in this sample but suggested that methodological problems may have suppressed the magnitude of the correlation.

A later study by Gendreau, Grant and Liepciger (1979) attempted to examine the same question using a sample of Canadian offenders released from provincial institutions and followed for a 2 year period post-release. They included the self-esteem measure used in the earlier study by Bennett (1974) but also included a number of sub-scales which were purported to measure sub-components of self-esteem from the Adjective Check List (ACL, Gough and Heilbrun, 1965). The measures were administered prior to release and reconviction was used as the measure of recidivism outcome. The self-esteem scale used earlier by Bennett was unrelated to recidivism after two years.

However, other ACL measures which the authors argued were sub-components of self-esteem (personal adjustment, autonomy, abasement, unfavorable, affiliation, nurturance) were correlated with outcome suggesting that self-esteem was negatively correlated with recidivism.

Andrews et al., (1986) study of probation outcome provides an additional Canadian sample that provides data for assessing the relationship between self-esteem and recidivism. In this 2-year follow-up study, the correlation between self esteem and failure on parole was negative but insignificant ($r = -.05$). This study provided further evidence of a weak relationship between self-esteem and correctional outcomes.

Two other Canadian studies provide additional data for assessing the relationship between self-esteem and criminal behaviour and point to a considerable degree of complexity in the self-esteem construct with correctional samples. The first study was reported by Wormith (1984) using a three-year follow-up sample of inmates released from a provincial institution in Ontario who had participated in a treatment intervention while incarcerated. Self-esteem and other constructs were measured before and after program participation, therefore allowing change scores to be calculated. Wormith found a complex pattern of results with respect to recidivism outcome and self-esteem. Pre-test scores on self-esteem correlated with positive post-release outcomes ($r = .23$), while post-scores were weakly related in a negative direction ($r = -.06$). Of particular interest was a negative relationship between self-esteem change scores and outcome following release, suggesting that increases in self-esteem may function to increase recidivistic behaviour. Another finding was an interaction between self-esteem and identification with criminal others. Released offenders who had increased self-esteem and increased their identification with criminal others during incarceration were particularly more likely to have negative outcomes on release. Wormith suggested that self-esteem may be a double-

edged sword in correctional settings. This study brings into question the long held assumption that increasing the self-esteem of prisoners during incarceration is a desirable treatment objective. Wormith argued that without positive changes in other areas (e.g., skill development, pro-social attitudes) increases in self-esteem could be detrimental to offenders after release.

A final Canadian study by Annis and Chan (1983) sheds additional light on self-esteem in correctional settings, particularly as it relates to treatment outcomes. Their study was based on a sample of 150 adult male offenders with alcohol and drug problems who had participated in a treatment program while incarcerated and were followed over a two year period. A treatment and a random control condition were used in the research. The researchers used a composite method for deriving a measure of self-esteem based on factors scores for a variety of personal well-being measures. There was no difference in release outcome when the results for offenders with positive self-images were compared with those having negative self-images. Again, this provides further support for a lack of relationship between self-esteem and post-release recidivism. However, the researchers did discover a moderating effect of self-image associated with treatment outcomes. Offenders with positive self-images appeared to gain more with treatment in terms of reduced reconvictions and less severe offences when compared with untreated offenders who possessed positive self images.

Again, there is considerable complexity in the findings related to criminal behaviour and self-esteem. Generally, it appears that self-esteem is not a major predictor of post-release outcome and may not serve well as an indicator of risk or criminogenic need. The data do suggest that assessment of self-esteem is indicated in settings where more precise specifications of self-esteem can be made. For example, the research suggests that changes in self-esteem may be important predictors of recidivism. Therefore, in contexts where pre-test and

post-test assessments can be made, the assessment of self-esteem may provide important predictive information. In addition to the potential predictability of self-esteem *change* scores, self-esteem may be viewed as a potential moderator of treatment outcomes. In treatment settings, therefore, the inclusion of self-esteem as a moderator variable may be helpful. However, the available literature does not provide strong evidence that a single measure of self-esteem is useful in predicting recidivism.

Cognitive

For the purposes of the review, we organized our examination of the research literature around the following constructs: impulsivity, risk-taking, general problem-solving, interpersonal skills, and empathy. We begin with the construct of impulsivity for which there is a relatively large body of research evidence.

Impulsivity

Impulsivity and criminal behaviour has been a popular focus of research for a number of years and it is now well-established that there is a link between impulsive tendencies and criminality for both juveniles and adults. Impulsivity refers to the tendency to act without thinking – failing to analyze the consequences of a particular behaviour before performing an act. Ross and Fabiano (1985, p. 37) define impulsivity as "... a failure to insert between impulse and action, a stage of reflection, a cognitive analysis of a situation". The inability to "defer gratification" has also been used to describe the construct of impulsivity. In their review of the cognitive literature, Ross and Fabiano (1985) identified a number of studies in the delinquency literature providing evidence that delinquent samples show higher levels of impulsivity than non-delinquent samples. The evidence came from studies in which impulsivity was operationalized through self-report questionnaires, performance tests involving

response latency and other indicators of poorly reflected choices (e.g., Porteus Maze), and laboratory experiments designed to assess deferred gratification responses.

Impulsivity serves as a broader category for many of the indicators included under the cognitive and behavioural domains. For this reason, we have subsumed a number of related sub-components/indicators under the "impulsivity" rubric. These include, manages time poorly, poor self-monitoring (non-reflective), and lacks conscientiousness. As separate indicators, there is little empirical evidence regarding their criminogenic status. However, we acknowledge that each of these items may be useful as an indicator of the more broader construct of impulsivity.

It has been argued that impulsivity is an identifying characteristic of many crimes committed by offenders. For example, Zamble and Quinsey's (1991) study of Canadian federal recidivists demonstrates how typically impulsive many offenders are in the commission of their crimes. Close to half of their recidivist sample indicated that the complete process from first conceptualizing a recidivistic crime to execution of the criminal behaviour took place within a period of approximately 1 hour. Only about one-quarter of the federal recidivists said they spent time planning or rehearsing their crimes for more than an hour before commission of the offence.

Although there are fewer descriptive studies of impulsivity for adult offenders, there are many demonstrations that juvenile offenders are more impulsive than normals. The Eysenck scales (Eysenck, Pearson, Easting and Ailsopp, 1985), which measure impulsivity, venturesomeness and empathy have frequently been used to operationalize impulsivity. Self-report in format, the impulsivity items directly ask respondents to indicate the extent to which they engage in impulsive acts (e.g., acting before thinking, tendency to engage in

unplanned activities, doing things on the "spur of the moment", etc.). Using this scale, Eysenck and McGurk (1980) showed that a large sample of delinquent youth (n=614) had considerably higher mean impulsivity scores than normals (n=402). Later, Thornton (1985) reported similar results when he compared two samples of detention centre youths with a sample of young adult normals. Thornton also presented data on self-reported volume of offending in the delinquent sample. He found a correlation of .31 between self-reported delinquent activity and self-reported impulsivity using Eysenck's scale.

More recent studies have confirmed the initial work using the Eysenck scales. Horvath and Zuckerman (1993) reported on an American sample of male and female undergraduates. They demonstrated a correlation between impulsivity scores using the Eysenck scale and self-reported criminal behaviour (r=.36). In addition, they found that impulsivity scores were positively correlated with other high risk behaviours in the "minor violation" (e.g., motor vehicle accidents, expulsions from parties, clubs, etc), financial, sport, and sexual (HIV risky behaviour) domains.

Using a self-report personality battery, Krueger et. al. (1994) measured impulsivity in a longitudinal study using a construct they labeled as "control" (e.g., reflective, cautious, careful, rational, planful). The study of 18 year old New Zealand youth examined the relationship between this self-reported measure of impulsivity and delinquency occurring over a 12-month period for a large sample of 18 year olds (n=857). Among males and females, high control was negatively correlated with self-reported delinquency in the .34 to .37 range. Although the magnitude of the correlations were lower (-.10 to -.20), the higher control (or lower impulsivity) was also negatively correlated with delinquency information obtained from police, court, and family/peer informant sources. A smaller Canadian sample of delinquents with learning disabilities was reported on by Waldie and Spreen (1992). In that study, parent-based ratings of impulsivity

indicated that delinquents who had been rated as very likely to do things without "thinking first" had much higher recidivism than youth who were not rated in this manner.

The well-established link between impulsivity and delinquency appears to be undisputed in the delinquency literature. In fact, Block (1995) has suggested that impulsivity is a major explanative factor in delinquency. He argues that the link between low I.Q. and delinquency that has been reported in etiological terms by many authors, is a spurious link that is explained by impulsivity. Block suggests that while impulsivity and
delinquent behaviour are correlated, I.Q. is correlated with delinquency because impulsive youth attend less to I.Q. testing situations and therefore achieve poorer results.

There have also been a variety of studies examining the link between impulsivity and crime in adult samples. Many of these studies have focused specifically on recidivism or presented post-dictive data based on volume of offending from criminal records. Generally, the results mirror those reported for delinquent samples – a strong link between impulsivity and criminal behaviour. While the Eysenck scales have also been used with adult samples, a variety of alternative methods have also been used to operationalize impulsivity.

One early study measured impulsivity in relation to the characteristics of crimes committed by homicide offenders (Heilbrun, Heilbrun and Heilbrun, 1978). The authors classified 164 homicide offenders as either having committed "impulsive" murders or "pre-meditated" murders and then examined their success on parole. The impulsive murders had a higher rate of (62%) recidivism in comparison to the pre-meditated murderers (45%). Recidivism was defined as failure on parole (technical violation or reconviction) while the non-recidivist group had completed parole and were discharged.

Andrews et. al. (1986) demonstrated a link between recidivism and impulsivity as measured by a self-report scale defined as self-control in an adult sample of Ontario probationers. Self-control was negatively correlated with recidivism (-.22) as defined by new convictions, arrests, or other evidence of new offences. In addition to recidivism, the self control scale was also negatively correlated with overall risk of recidivism (-.41) using the Level of Supervision Inventory (LSI).

A more recent study also examined the link between recidivism and impulsivity. Using a Finnish sample (n=348), DeJong, Virkkunen, and Markku (1992) studied recidivism among offenders convicted of manslaughter, attempted manslaughter, and arson. Impulsivity was operationalized by classifying the index crime as "impulsive" or "non-impulsive". During the average follow-up period of 2 years, released offenders with impulsive index crimes were more likely to recidivate than offenders with index crimes that were not classified as impulsive. The correlation was higher for those who had committed manslaughter than those who had been convicted of arson offences. The correlation between impulsivity and recidivism occurred for both general and violent recidivism.

An important study by Prentky et. al. (1995) examined the predictability of impulsivity in a long-term follow-up of 109 incarcerated rapists who had been released to the community for an average of 12 years. Prentky and his colleagues used file-based ratings for the subjects based on "lifestyle" impulsivity. This construct referred to unstable employment (absenteeism, quitting), reckless behaviour, aggression in response to frustration, and disruptiveness and fighting. The research team categorized recidivism behaviour into various offence types. During the follow-up period, "high-impulsivity" offenders were more than twice as likely as "low-impulsivity"

offenders to commit a new offence. High-impulsive offenders were almost 3 times more likely to commit violent or sexual offences than the low-impulsive group. However, a higher level of predictability was obtained when non-sexual victimless crimes were examined (e.g., drunkenness, trespassing, break and entering, disorderly conduct, etc.). High-impulsivity offenders were almost 4 times as likely to be convicted of such offences as low-impulsivity offenders.

In a recent study involving a general sample of male offenders on parole, the question of the link between offence type and violence was also examined (Cherek et. al., 1997). The authors classified the sample (n=30) into violent and non-violent offenders and examined the extent to which impulsivity scores differed across the two groups. A delayed gratification task and a self-report impulsivity measure (Barratt Impulsivity Scale) were used to assess impulsivity. Cherek et. al., found violent offenders made a significantly higher proportion of impulsive choices on the delayed gratification task than non-violent offenders. Violent offenders also exhibited higher self-report impulsivity scores in comparison to non-violent offenders using two separate measures. Interestingly, the researchers also found that there was a correlation ($r = .42$) between the impulsive choices on the delayed gratification task and scores on the self-report impulsivity scale.

While the possible multi-dimensionality of impulsivity has not been examined thoroughly by researchers, a study by Stanford and Barratt (1992) deserves mention. The authors used the Barratt Impulsivity Scale to measure 3 impulsivity constructs in an inmate sample (n=79): motor impulsiveness, cognitive impulsiveness, and impulsive nonplanning. As a criterion, the researchers examined a measure they referred to as "impulsive control incidents". The latter refers to an index which counts the total number of impulsive "disorder" occurrences (e.g., substance abuse, alcohol-related convictions, repeated aggression, impulsive fire-setting). The researchers found

that only the motor impulsiveness sub-scale predicted scores on the impulsive behaviour measure. More research is required to determine the utility of a multiple construct approach to assessing impulsivity and predicting criminal behaviour.

The data on various indices of criminal behaviour and impulsivity among adult offenders clearly suggests that impulsivity is an important construct in the study of criminality. In particular, several studies have shown that impulsivity is predictive of recidivism in adult offenders samples. Most researchers and practitioners in corrections would have difficulty recommending impulsivity as a major need factor in a criminogenic assessment.

Problem Solving

A large proportion of the literature on problem-solving skills and criminal behaviour has focused on inter-personal problem-solving skills – skills necessary for effectively interacting with individuals when problems are encountered in inter-personal relationships (e.g., Ross and Fabiano, 1986). Here we focus particularly on general problem-solving skills which apply to both personal and inter-personal problems.

In some cases it is difficult to separate the research that specifically addresses inter-personal and general problem-solving skills. However, inter-personal problem-solving skills generally refer to correcting problematic perceptions or attributions that frequently occur in interpersonal situations among offenders. General problem-solving skills, on the other hand, refer to the skills involved in rational problem-solving using carefully executed steps for solving problems that promote positive and pro-social outcomes (e.g., collecting information, defining the problem, generating options, selecting appropriate alternatives, etc.). The Problem Solving Inventory designed by Heppner and

Peterson (1982) has frequently been used to operationalize general problem-solving skills. In addition, a similar measure has been proposed by D'Zurilla and Nezu (1990). Both measures use a series of sub-scales to assess problem-solving skills (e.g., problem definition, decision-making, systematic approach, etc.).

Although on face value problem-solving appears to be an important construct for predicting criminal and recidivistic behaviour, there is a lack of studies which examine general problem-solving skills in offenders. The majority of research is based on delinquent sub-samples and few studies have examined the relationship between general problem-solving and recidivism. A number of studies have shown only pre-test/post-test changes on problem-solving skills as a result of offender participation in treatment programs.

One of the studies to report on problem-solving skills and delinquency was conducted in the context of a treatment program aimed at addressing a variety of skills deficits. Hains and Herrman (1989) measured problem solving through a series of 22 problem-solving vignette tasks which were tailored specifically to adolescents (Adolescent Problems Inventory, Friedman et. al., 1978). They found that among their subjects, delinquents labeled as aggressive scored lower on problem-solving skills than non-aggressive youth. In addition, "poor" problem-solving youths as measured through the self-report scales were more likely than youth with higher problem solving scores to be rated as "low" functioning by treatment centre staff.

Slaby and Guerra (1988) reported similar findings when they examined problem-solving skills in a sample of adolescent offenders who had been incarcerated. The researchers also used vignette-based items to measure subjects' skills in solving problems. They found that juveniles who had been rated as high in aggression scored lower on the problem-solving tasks than

juveniles who had been rated as low in aggression. A second study based on the same sample (Gurerra and Slaby, 1990) reported increases in problem solving skills as measured at post-test after a 12 session intervention. The offenders significantly improved their problem solving skills along a number of dimensions including problem definition, generation of consequence and solutions, and goal selection.

Another treatment study by Dishion, et. al. (1984) used the same Adolescent Problems Inventory reported by Hains and Herrman (1989). However, in this study the authors reported data on the relationship between problem-solving and post-program recidivism. The researchers found that problem solving skills were negatively correlated to both self-reported ($r = -.37$) and officially recorded delinquency ($r = -.33$).

There have been only a handful of studies examining problem-solving skills among adult offenders. Ingram, Dixon and Glover (1983) used the Problem Solving Inventory (PSI, Heppner and Peterson, 1982) in their sample of incarcerated and non-incarcerated adult males. There were no significant differences between the offender and non-offender sub-samples on the 3 sub-scales of the PSI: systematic approach, impulsive behaviour, and confidence in problem-solving. They also used the Means/Ends Problem Solving Scale (MEPS, Platt and Spivack, 1975). The MEPS scales measure the extent to which subjects can effectively plan step-to-step means toward solving problems. However, no significant differences between the incarcerated and non-incarcerated men were recorded for the MEPS scales.

Another study using a sample of adult male prison inmates explored the relationship between problem-solving and suicidality (Ivanoff, et. al., 1992). The sample was composed of inmates who had a history of "parasuicide" and the MEPS was employed as a measure of problem-solving. The authors reported

that there was no relationship between problem-solving proficiency as measured by the MEPS and current suicidal status of the inmates. Another study of prison inmates reported by Pugh (1993) failed to find differentiating effects associated with problem-solving skills. In this study, Pugh examined self-reported prison adjustment and found no relationship between this measure and the Heppner and Peterson (1982) Problem-Solving Inventory. The author also reported than the problem-solving scores observed for his sample of incarcerates did not differ markedly from the scores for normative samples of undergraduates using the same measure (Heppner and Peterson, 1982).

Although there appears to be no relationship between problem-solving skills and personal well-being variables among adult offenders, the results do not rule out the possibility that problem-solving may be related to criminality as described in delinquent samples. Ingram, et. al. (1985) reported on a cross-sectional study which identified sub-samples of recidivists and non-recidivist inmates. They used the Problem Solving Inventory to measure problem solving skills and examined the extent to which the 3 sub-scales (systematic approach, impulsive behaviour, and confidence in problem-solving) differentiated between recidivists and non-recidivists. In comparison to non-recidivists, the impulsive behaviour sub-scale was significantly higher for recidivists. However, there were no differentiating effects associated with the other two sub-scales.

There is a lack of research on the link between problem-solving and criminality among adult offenders. Only one cross-sectional study demonstrated effects of problem-solving skills on recidivism. In addition, problem-solving failed to differentiate between offender and non-offender samples and was unrelated to inmate adjustment. At the same time, there is not sufficient evidence to suggest that general problem-solving skills should not be assessed as a criminogenic need. For example, using the federal offender sample discussed earlier, Motiuk and Brown (1993) found poor problem-solving skills to be significantly correlated

with suspension on conditional release (r = .15). Problem-solving has high face validity as evidenced by the many interventions that are designed to increase problem-solving skills. In addition, the predictive validity of problem-solving skills is evident in the delinquency literature. Problem-solving is also theoretically related to impulsivity – a construct which has shown to be highly related to criminal behaviour. Poor problem-solving skills can be viewed as a component of impulsivity in that many individuals with poor problem-solving skills fail to stop and apply step-by-step solutions to problem situations. While more data is needed to assess the dynamic and predictive qualities of problem-solving skills in adult samples, this construct should remain an important component of risk/needs assessment for federal offenders.

We have subsumed a number of the cognitive indicators under general problem-solving, including "unable to recognize problem areas", "unable to generate choices", "unaware of consequences", narrow and rigid thinking (e.g., irrational), and concrete thinking. Because of the specificity of these constructs and the diversity of definitions and measurement approaches that have been utilized in the general and criminological literature, it is difficult to integrate the results of existing studies. Ross and Fabiano (1985) reviewed some literature on these more specific indicators, particularly rigid and concrete thinking. They found studies which demonstrate differences on these constructs for delinquents and non-delinquents and adult and non-adult offenders. Admittedly, such cognitive variables are difficult to measure and normally complex psychological tests are employed to assess subject performance in these areas. If user-friendly rating criteria could be developed for assessing cognitive thinking styles, such indicators may be very useful to include within the general problem-solving area.

Interpersonal Skills

There has been considerable attention focused on the area of social skills deficits among delinquents and adult offenders in the last twenty years. A number of programs aimed at increasing social skills in offender populations have been developed and researchers have provided evidence of an ability to increase social skills as a function of participation in treatment programs. These programs have included social skill-based interventions for wife batterers (Hamberger and Hastings, 1988), generalized social skills training for juvenile offenders (e.g., Mathur and Rutherford, 1994; Shivarttan, 1988; Spence and Marzillier, 1981), and programs specifically targeted toward increasing social skill deficits among sexual offenders (e.g., Valliant and Antonowicz, 1992). Not only have social skills programs been popular as a treatment focus for program developers, but even offenders themselves have rated the effects of such programs highly. For example, in a study by MacDevitt and Sanislow (1987), probationers and incarcerated offenders who had been involved in treatment programs rated "improvement in skills in getting along with people" as the most highly valued among 10 different treatment outcomes.

Although there has been much development in the program area and considerable discussion along theoretical lines, there remains a lack of research which directly addresses the relationship between social skills of offenders and criminal behaviour, especially recidivism. Our search of the literature identified only a few studies which provided data on social skills training and post-release outcomes. Including the treatment studies mentioned above, there were many reports in the literature involving pre-test/post-test changes on social skills training measures in the context of treatment programs. However, these only provide evidence of the potential for social skills to change over time but do not provide evidence of the criminogenic status of such skills. Below we review some of the research linking social skills deficits to offender populations and briefly allude to theoretical propositions about how such deficits might be related

to criminal behaviour. A particular difficulty in reviewing this literature concerns the variety of definitions that are used to describe social skills. Generally, we refer to social skills as the ability to avoid conflict in relationships and to resolve inter-personal problems in a manner that results in mutually satisfying outcomes. A major theme in the literature on social skills, specifically as it relates to offender populations, is the role of social skills in decreasing the probability of aggressive behaviour in social interactions. Many researchers refer to the inter-personal context of aggressive behaviour and suggest that the development of social skills could lead to less aggressive resolutions to inter-personal problems (e.g., Henderson, 1986).

In their review of cognitive variables Ross and Fabiano (1985) identified several studies showing higher social skills deficits in populations of delinquents. They found studies to suggest that behavioural disorders are associated with ineffective inter-personal problem solving skills. In addition, social skills deficits have been shown to be correlated with aggressive and impulsive behaviour. In their review, Ross and Fabiano point to the ability to understand a social situation and select from an appropriate menu of responses as key characteristics that define individuals with social skills. They stress the "cognitive" aspect of social skills in that individuals must understand problems they may be having in their inter-personal relationships, and use the necessary thinking skills required to solve the problems.

Serin and Kuriychuk (1994) have discussed cognitive deficits of violent offenders and emphasize the negative "schemas" that such offenders appear to possess. They argue that persistently violent offenders view the world in hostile terms, believing that most individuals have malevolent intentions toward them. They suggest that such offenders are more likely to attend to negative aspects in their social interactions and fail to give appropriate attention to positive elements. Coupled with their tendency to be impulsive and unreflective in approaching

problems, the negative schema frequently result in aggressive or violent resolutions to inter-personal situations. Serin and Kuriychuk (1994) build their conceptual model on the basis of a number of laboratory studies which have examined the cognitions of offenders, particularly those assessed as psychopathic.

Dodge and Frame (1982) provided some evidence of the tendency of offenders to attribute negative intent to the actions of others in a number of studies of juveniles. They attempted to identify differences in how aggressive and non-aggressive boys formed attributions about the actions and behaviours of their peers. In their work Dodge and Frame employed a series of laboratory exercises involving stories in which each boy was depicted as suffering a negative outcome as a result of an ambiguous activity by another child (e.g., accidentally being hit by a ball). The boys who possessed histories of aggression were much more likely that non-aggressive boys to attribute hostile intent to the ambiguous actions of others. Dodge and Frame also noted that the aggressive boys were more likely than the non-aggressive boys to suggest that they would resolve the negative outcome by instigating an aggressive response toward the other actor. Another finding was that the cognitive bias exhibited by the aggressive boys was present to a greater extent when they were the subject of the negative outcome rather than a peer. For example, when the stories involved the negative outcome occurring to a friend rather than the subject, aggressive boys were less likely to attribute hostile intent in such situations. In other words, their "paranoid" attributions were restricted to themselves and not others.

Another recent contribution to the delinquency literature reinforces the notion that many delinquents lack important social skills. Marcus (1996) has reviewed the literature on the quality of peer relationships among delinquent and non-delinquent youth. His review was a response to some researchers who

have claimed that relationships among delinquents tend to be characterized by a greater degree of trust and warmth than relationships among non-delinquents. However, the studies reviewed by Marcus suggested a contrary interpretation. He found little evidence of superior quality in relationships among delinquents and noted that such relationships exhibit a greater presence of conflict and lack of stability. He concluded that friendships among delinquents involved "more arguments, greater aggressive and impulsive behaviour, poorer social-cognitive problem-solving skills, perceptual and cognitive distortions and poorer reparative skills" (Marcus, 1996:155).

As noted above, there have been few studies attempting to assess the relationship between social skills deficits and volume of criminal behaviour. However, one Canadian study of training school delinquents examined social skills in relation to post-release recidivism (Zarb, 1978) in an Ontario sample. In this study social skills were assessed through self-report measures along with ratings by training school staff with respect to the inter-personal effectiveness of the youth. Zarb found that the composite measure of inter-personal effectiveness was negatively correlated with officially recorded delinquency during the follow-up period. In addition, the inter-personal effectiveness measure was also found to be correlated with social adjustment measures that were completed on the youth by post-release case-workers.

While the evidence suggests a link between delinquent or aggressive behaviour and lack of social skills, at least two delinquency studies failed to confirm this relationship. Renwick and Emler (1991) reported on a retrospective study (n = 37) in which the social skills of delinquents were examined in relation to their self-reported delinquent behaviour in the past. They used both self-reports and behaviour methods in their assessment of social skills. However, they found no relationship between social skills and volume of delinquent activity reported by the youth.

A second study attempted to examine the relationship between offence type and social skills in a group of juvenile offenders (Ford and Linney, 1995). They compared sex offenders, non-sexual violent offenders, and status offenders on a measure of inter-personal skills. However, they found no differences between the three types of offenders on their measure of social skills. One interpretation of their data is that inter-personal skills deficits may not be implicated in the cause of aggressive behaviour.

The comparison of social skills among offender and non-offender groups has been generally limited to juvenile offenders. While there have been treatment studies of social skills training programs among adult offenders, there has been less study of the link between criminal behaviour and social skill deficits. One exception involves a focus on the sub-sample of sexual offenders where there has been frequent emphasis in the literature on teaching sex offenders appropriate hetero-sexual skills. One study reported by Segal and Marshall (1985) compared the social skills levels of rapists and child molesters incarcerated in a Canadian federal penitentiary with those of non-incarcerated men. These researchers used judge ratings, confederate ratings, and self-report measures to assess hetero-sexual skills. A self-report measure of social anxiety was also administered. For each of the social skills measures that were examined, Segal and Marshall found that higher levels of social skills were exhibited by the non-incarcerated men in comparison to the sample of incarcerated sexual offenders. Another finding among the incarcerated subjects was that the child-molester sub-group exhibited poorer social skills than the rapist sub-group.

On a theoretical basis there are good arguments to suggest that social skill deficits are likely to result in a higher probability of aggressive behaviour. In turn, a higher incidence of aggressive behaviour is likely to result in criminal behaviour and criminal convictions for aggressive acts. At the same time, there

is limited evidence in the available literature to substantiate the theoretical claims that have been made, especially with respect to adult offender samples. The evidence is rather more suggestive than definitive. Gendreau, Little and Goggin's (1996) review of predictors of recidivism did not examine specific indicators of social skill deficits. However, they point to the area of interpersonal conflict as a statistically significant predictor of criminal recidivism (average r = .15). Included in interpersonal conflict were studies that measure family discord and conflict with significant others.

Strictly speaking the presence of interpersonal conflict that might be related to recidivism does not imply that offenders necessarily lack interpersonal skills. However, the fact that interpersonal conflict places offenders at risk of recidivism, increases in interpersonal skill levels may be one of the only preventative measure that can be taken to reduce risk in this area.

Given the weight of theoretical arguments about inter-personal skill deficits and criminal behaviour and the fact that the presence of interpersonal conflict predicts recidivism, social skills should continue to be assessed as a criminogenic need. More research is needed not only to verify that a link exists between inter-personal skills and criminal behaviour, but also the types of instruments and procedures that will yield the most predictive assessments. To increase the usefulness of assessment in this area, it appears that more specific indicators of social skill deficits could be included in the assessment protocol.

Empathy

Lack of empathy has frequently been perceived as a major factor in the development of criminal behaviour and in the perpetration of certain types of crimes. A number of programs have been developed to increase the levels of empathy demonstrated by offenders. For example, Janoka and Scheckenback (1978) used the well-known construct of empathy reflected by the "Carkhuff

Model" in psychotherapy with groups of inmates and staff. They demonstrated that increases in empathy among inmates even exceeded the levels of increases produced among groups of correctional staff. In an experimental study Leak (1980) documented increases in empathy associated with a structured intervention versus a non-directive group program for adult offenders. More recently, successful programs focusing on increasing empathy among sex offenders have also been reported (Pithers, 1994).

Empathy has been particularly associated with assessment and programming in the sex offender arena. Theorists have argued that callous acts of rape, for example, were possible because of the rapist's inability to exhibit compassion or feeling for the suffering of their female victims (Scully, 1988). Marshall (1993) has argued that a lack of empathy among sexual offenders could be traced to a lack of, or weakness, in early emotional attachments between the sex offender and his or her parents. A lack of empathy has also frequently been used to characterize psychopathic offenders. Lack of empathy and callousness is included among the items in the most popular instrument used to assess psychopathy, the Psychopathy Checklist. Hare and Forth (1993) note that Factor 1 of the clinically-based rating scale (reflecting interpersonal and affective characteristics) is negatively related to self-reported empathy and anxiety.

Various terms have been used to describe empathic behaviour in the research literature that addresses criminal behaviour. For example, we have included the indicator of "self-importance" or egocentricity within the empathy construct because of the obvious overlap. It can also be argued that individuals who exhibit "manipulative" behaviour (i.e., from the behavioural principal component) demonstrate a lack of empathy toward others. Empathy has been measured in a variety of ways and, like other criminogenic factors within the personal/emotional needs domain, has been conceptualized as a multi-

dimensional construct. Davis' Interpersonal Reactivity Index (see Pithers, 1994) provides a good example of how the construct of empathy has been divided. This empathy measure consists of four sub-scales:

- *Perspective-taking* – defined as the cognitive ability to anticipate another's point of view
- *Empathic Concern* – the ability to be compassionate toward another's experience of distress
- *Fantasy* – the ability to identify with fictitious characters (e.g., characters in movies, plays, books)
- *Personal Distress* – feelings of anxiety or discomfort when witnessing other's anguish.

This combination of dimensions has also been included in more general scales such as the popular self-report empathy scales proposed by Hogan (1969) and by Eysenck and his colleagues (Eysenck, Pearons, Easing & Allsopp, 1985). Regardless of the instrument used, assessments of empathy usually include notions of being able to "place oneself in another's shoes" and to feel compassion when other people are experiencing distress. There is an obvious intuitive appeal about the link between lack of empathy and criminality. Empathy for a potential victim can easily be conceived as an inhibiting factor in decisions regarding whether or not an offender would commit a property crime or the likelihood of engaging in more serious offences involving injury to a victim.

Ross and Fabiano (1985) reviewed a number of studies, particularly in the delinquency literature which suggest that offender populations differ significantly on empathy in comparison to non-offender populations. They cited numerous studies to conclude confidently that delinquents possess less empathy than non-delinquents. They also found studies showing a link between low empathy and volume of criminal offending (e.g., from criminal history sources) as well as higher recidivism. At the time their review was conducted, they also referred to some studies which showed lower levels of empathy among psychopathic offenders in comparison to non-psychopathic offenders.

Among the studies which demonstrate differences on empathy between delinquents and non-delinquents, Eysenck and McGurk's (1980) is a good sample. They found lower empathy in their sample of detention centre youth (n=614) in comparison to a sample of normal, non-delinquent controls (n=402). The empathy scale included 19 self-report items such as "Do you feel sorry for very shy people?" and "Would you find it very hard to break bad news to someone?". Another study reported by Kaplan and Arbuthnot (1985) used a self-report measure of empathy and a story-telling exercise designed to measure perspective-taking in an American sample of delinquent and non-delinquent youth. In the story-telling exercises subjects recalled the scenario of a story from the point of view of the central character as well as from a bystander's perspective. The stories were then coded for the ability of the respondents to understand (role-taking) the perspectives of others. While differences were found on the measure of affective empathy between the two groups, delinquents and non-delinquents did not differ on social perspective-taking as measured through the story-telling exercise.

Another important study in the delinquency literature was reported by Ellis (1982). He compared 12 to 18 year old delinquents (n=331) and non-delinquents (n=64) in Ohio using Hogan's (1969) well-known Empathy Scale. Not surprisingly, delinquents scored lower on the empathy scale than non-delinquents. However, Ellis also showed that aggressive delinquents scored lower on the empathy scale than non-aggressive delinquents. In fact, while non-aggressive delinquents scored higher than aggressive delinquents on empathy, the former group were not significantly different than non-delinquent youth on the measure. The interest in the association between deficits in empathy and aggressive behaviour is one that is repeated throughout the theoretical and empirical literature, although findings do not always support a link. A second interesting finding from the Ellis data was a link between empathy development in youth and delinquency. The data indicated that empathy was positively

correlated with age in the non-delinquent sample but uncorrelated in the delinquent sample. This suggests that while empathy increases as normal non-delinquent children develop, empathic development may not occur with aging in delinquent samples.

With respect to research on the link between empathy and criminality among adult offenders, Deardorff et. al. (1975) described a study comparing Hogan Empathy scores for non-offenders, first-time offenders, and repeat offenders. The non-offender sample consisted of psychology undergraduate students. Deardorff and his colleagues found that while the non-offender and first-time offender groups did not differ on empathy, the latter two groups were both significantly higher on empathy than the repeat offenders. Concerned that university educational achievement (i.e., the university status of the non-offender group) may have influenced the results, the researchers collected data based on new samples. In the second study the non-offender sample was composed of men who had not completed university training. However, the results from the first study were replicated, showing lower empathy among repeat offenders in comparison to non-offenders and first-time offenders. The replication of the results provided corroborating evidence that empathy is related to criminal recidivism.

In the sample reported by Motiuk and Brown (1993) examining post-release suspension in a sample of federal offenders, the authors reported a positive link between low empathy as rated by case management officers and suspension while on conditional release. Low empathy was significantly correlated with recidivism at the .20 level. However, two other Canadian samples failed to provide a confirmation of the link between empathy and recidivism. Both studies also employed the Hogan empathy scale. Andrews et. al. (1986) found that empathy was not significantly related to probation outcome in their sample of Ontario probationers ($r = -.08$). In addition, Wormith (1994)

found no correlation between empathy and recidivism in his post-release sample of offenders who had been incarcerated in a provincial facility. Empathy scores before treatment, post-treatment, and change scores were all examined in Wormith's study.

Using a different criterion measure in relation to empathy, an interesting study reported by Van Voorhis (1985) examined restitution outcomes in a sample of U.S. probationers. As an alternative measure of empathy, Van Voorhis operationalized Kholberg's stages of moral development. Progression in the stages of moral development suggests greater identification with the social good and a higher level of social perspective-taking. VanVoorhis found that high maturity offenders (i.e., offenders at higher levels of Kohlberg's stages of moral development) were more likely than low maturity offenders to successfully complete their restitution sentence by reimbursing their victims. While strictly speaking, restitution outcome is not a measure of recidivism or criminal behaviour, it suggests that offenders who are higher on empathy may perform well while under community supervision.

In comparing adult offender types on empathy, the major findings derive from studies comparing psychopathic and non-psychopathic offenders. As noted above, lack of empathy has been used as an item in the most popular method to assess psychopathy (PCL). Other studies have found relationships between empathy and alternative measures of the anti-social construct. For example, Bayer, Bonta and Motiuk (1985) found that empathy was correlated in the predicted direction with a number of Minnesota Multiphasic Personality Inventory (MMPI) based sub-scales derived from the psychopathic deviate items. Their sample was based on inmates incarcerated in a provincial institution in Ontario. In turn, as noted above, there has also been an interest in the construct of empathy with respect to treatment of sex offenders and the study of recidivism. However, in a recent meta-analysis conducted by Hanson and Bussière (1996)

the authors found no relationship between empathy and post-release recidivism in a number of studies focusing on sex offenders (average r = .03). At the same time, the authors note that there is a need for improvement in the measurement of empathy in offender samples.

Two studies addressing the relationship between empathy and violent offending among adult offenders are worthy of note. Although the sample sizes were not large, in both cases the studies failed to find significant differences in empathy when comparing violent and non-violent offenders. Hoppe and Singer (1976) compared offenders (n=150) with murder, assault with a weapon, rape, child molesting and non-violent property as their offences. While empathy appeared to be lowest in the offenders with murder and non-violent property offences, there were no statistically significant differences across the five groups. Using an MMPI-based clustering methodology, Henderson (1983) identified a cluster featuring high scores on empathy within a sample of incarcerated offenders. While non-violent offenders (n = 87) tended to be less psychiatrically disturbed than violent offenders (n=105), the two groups were not different on the cluster that included empathy.

As in other examples within the personal/emotional needs dimensions, the sturdier evidence for the predictability of empathy is drawn more from samples of delinquents than from adult offenders. Despite the interest in the construct from the point of view of offender treatment and clinical impressions about the lack of empathy in offender populations, the area has not received sufficient attention from researchers. In fact, the available studies examined in this review were primarily drawn from the decades of the 1970's and 1980's with little attention to this area evident in the 1990's. In the adult offender studies we examined there was mixed evidence of a relationship between empathy and recidivism and little evidence of differences in empathy across offence type. One possibility is that self-report measures of empathy, the dominant method used in both adult and

juvenile samples, furnishes a less valid measure of empathy among adult offenders. For example, the obvious argument that social desirability bias may affect the validity of self-reported empathy among "motivated" samples of adult offenders must be acknowledged. This is particularly relevant given that many studies assess empathy within the context of treatment where offenders may be inclined to present themselves in a more favorable light.

Nevertheless, combined with the strength of theoretical arguments, the available evidence supporting a relationship between empathy and recidivism is convincing enough to recommend that empathy remain a component of assessment within the personal/emotional needs dimension. This recommendation is also justifiable given the evidence already provided on the predictability of rater assessed empathy (Motiuk and Brown, 1993) in a federal release sample. Some measurement development may be necessary to assist those who must make assessments of offenders' empathy.

Behavioural

A number of sub-components are included under the behavioural principal component. These include assertion, aggression, coping, and neuroticism. It will be recalled that some of the original sub-components and indicators within the behavioural domain have been reported in the cognitive sub-component above.

Assertion

There are many references to offender deficits in assertiveness skills in the correctional treatment literature. Unfortunately, conceptualizations about how assertiveness is related to criminal offending is not well developed in this literature. Nevertheless, a number of studies have reported success in increasing levels of assertiveness among offenders. For example, in 1982 Beidleman reviewed 11 studies that focused on assertiveness training with

juvenile and adult offenders. By way of definition of the construct of assertiveness, Beidleman noted that four primary tenets of assertiveness training were included in the programs that he reviewed:

- Teaching the difference between assertion and aggression and between non-assertion and politeness;
- Accepting offender's personal rights as well as respecting the rights of others;
- Reducing the cognitive and affective obstacles to employing assertive responses
- Learning assertiveness skills through active learning methods (e.g., role-playing)

Beidleman found that the studies evaluating the effectiveness of assertiveness training in offender populations generally lacked strong methodological designs and provided little evidence for making confident conclusions about the effectiveness of such methods. There was mixed evidence of success with some studies showing pre-test to post-test changes on assertiveness measures while other studies found no significant differences. None of the studies reported in the review attempted to predict post-program recidivism and only one study showed evidence of behavioural changes associated with assertiveness programming. In the latter study, Beidleman noted that reductions in institutional disciplinary actions were reported. However, the non-experimental study design was too weak to permit strong evidence of post-program effects on behaviour.

In addition to the programs which are specifically focused on increasing assertiveness skills, many programs have been described which include assertiveness as a component within a series of social skills modules (e.g., Cheek and Baker, 1977; Marshall, Turner and Barbaree, 1990; Marshall, Keltner, and Marshall, 1981), and such programs have provided evidence of increases in assertiveness skills among adult inmate participants. Assertiveness skills have

also frequently been mentioned as major targets of treatment within programs designed for sex offenders (e.g., Keltner, Scharf and Scheell, 1978; Lee et. al., 1996). Again, these programs have shown gains in assertiveness made by sex offenders over the treatment administration period.

Despite the work conducted on post-program outcomes for assertiveness skills training in the offender treatment literature, there has been less empirical work that specifically addresses the presumed link between assertiveness and criminal behaviour. In addition, there is an absence of follow-up studies that show links between lack of assertiveness and recidivism. Unlike other criminogenic factors within the personal/emotional needs domain, there is little in the way of developmental work related to the construct using juvenile populations. One exception is a study by Karoly (1975) which examined assertiveness skills among delinquent and non-delinquent females. Using the Rathus Assertiveness Schedule (Rathus, 1973), a popular self-report measure, Karoly found that the delinquent females did not differ from non-delinquents on the assertiveness scale.

There are some examples of research examining the construct of assertiveness with adult offenders. One of the first studies to be reported on offender assertiveness was conducted by Keltner, Marshall and Marshall (1976) using a sample of federal prisoners. They developed a series of measures based on role plays and responses to vignettes. The content of the role plays and exercises were designed specifically to reflect the types of problems and situations encountered by inmates and typical circumstances which offenders might encounter in the community. They attempted to measure both "under-assertiveness" and "over-assertiveness" (i.e., inappropriate assertive responses). They found that most inmates (80%) supplied a mixture of both under and over-assertive responses. However, the authors noted that generally, inmates tended to show a predominance of under-assertiveness as measured by the various

instruments that were developed. While this study provided a descriptive account of assertiveness among federal inmates, no comparisons were made with non-offender subjects. An interesting finding was that inmates who had high self-reported "social fear" scores, also tended to be classified as "over-assertive".

Segal and Marshall (1985) compared assertiveness in five categories of men including incarcerated rapists, child-molesters, non-sex offenders, and two groups of non-incarcerated men including low and high socioeconomic status subjects. The incarcerated offenders were all drawn from a maximum security population of federal offenders. They used a self-report assertiveness questionnaire as well as role play exercises used to rate levels of subject assertiveness by judges. The latter measure was based on measurement technology developed in a series of studies by Marshall and his colleagues which examined assertiveness among offenders (e.g., Keltner, Marshall and Marshall, 1976). There were no differences observed between the groups on the role play measures. However, incarcerated men exhibited significantly lower assertiveness than the non-incarcerated men on the self-report scale. High socioeconomic status men showed the highest levels of assertiveness of all of the groups included in the study. In addition, child molesters had lower scores on the self-report assertiveness measure when compared with the rapists and non-sex offenders.

In a similar study conducted by Quinsey, Maguire and Varney (1983), role play assertiveness was assessed among inmates in a forensic psychiatric facility and compared with assessments completed for community control subjects. Again, the community control subjects exhibited higher levels of assertiveness than the offender subjects. However, in comparison to the study reported above, the authors found the differences between the groups were observed for the role play measures but not with a self-report questionnaire and a narrative completion task.

Some of the research on assertiveness focuses specifically on the link between assertiveness and "over-controlled" versus "under-controlled" hostility. "Over-controlled" hostility is associated with violent offending in which violent offenders have trouble expressing hostility in overt ways under usual circumstances in their daily relationships with others. It has been hypothesized that such individuals can sometimes become violent because of a build-up of unexpressed (or over-controlled) hostility. In addition, it has been argued that individuals high in "over-controlled hostility" are likely to suffer from poor assertiveness skills. This hypothesis was explored by Henderson (1983) in a study of British prisoners. She found that in comparison to inmates who were classified as under-controlled, the over-controlled hostility group showed more assertiveness deficits. Henderson argued that in terms of treatment, the two groups require directly opposing treatment approaches. While the under-controlled group required a reduction in overly-assertive (i.e., aggressive behaviour), while the over-controlled group needed treatment aimed at increasing assertiveness.

The study by Quinsey, Maguire and Varney (1983) reported above, also examined assertiveness in relation to over-controlled hostility. They measured hostility control among inmates who had been convicted of homicide or attempted homicide. A group of non-violent offenders with no offences against persons was also included in the comparison. The researchers found that assertiveness, as measured by ratings based on role-plays, was lower among the over-controlled group compared to the low control and non-person offenders groups. The authors argued that recidivism among offenders with over-controlled hostility would normally be low and that it is unlikely that assertiveness training would reduce subsequent criminality in this group. However, they noted that assertiveness interventions might increase the quality of life of this group of offenders who suffer from low assertiveness.

A related study examined assertiveness in relation to neuroticism in a predominantly offender sample (Hernandez and Mauger, 1980). In this study, Eysenck's personality inventory was used along with a self-report measure of assertiveness and aggression. The complexity of the constructs of assertiveness and aggression are highlighted in the findings of this study. Hernandez and Mauger (1980) found that, as hypothesized, subjects high in neuroticism were lowest in assertiveness. However, they also reported that neuroticism was correlated with high self-reported aggression. Psychoticism and extroversion were also measured in this study, although no correlations between these scales and assertiveness were reported. However, neurotics who were low in extroversion (introverted) were particularly low in assertiveness.

As reported earlier, psychopaths and non-psychopaths have frequently been compared on some of the indices included in the personal/emotional needs dimension. One final study is worthy of note in this respect. Serin (1991) compared psychopaths and non-psychopaths drawn from a federal inmate population on self-reported assertiveness and aggression using the same measure as employed by Hernandez and Mauger (Interpersonal Behaviour Survey). While Serin found differences between the two groups on self-reported aggression, psychopaths and non-psychopaths did not differ on assertiveness.

The available literature on offender populations fails to provide direction on the criminogenic status of assertiveness. There is some evidence that offenders lack assertiveness when compared to normal samples, and that sub-groups of offenders (e.g., those high in neuroticism and over-controlled hostility) have greater deficits in this area. However, there are no studies that provide direct evidence of a link between assertiveness and criminal behaviour.

There is good reason to predict, however, that released offenders who do not display appropriate degrees of "correct" assertiveness will have difficulty adjusting to release. For example, the replacement of aggressive responses to interpersonal situations with more assertive responses is likely to help many offenders avoid violent behaviour that could result in trouble with the law. Assertiveness is also likely to play a key role in an offender's attempts to separate from criminal peers who propose various criminal activities. For example, assertiveness as applied to the management of situations with criminal peers is used in the cognitive skills training programs for offenders. In addition, programs aimed at reducing substance abuse make use of assertiveness training to help offenders deal with peers who invite them to use substances. In such treatment contexts, inmates with poor assertiveness skills are helped to develop a repertoire of skills that allow them to assert their own rights and behavioural preferences while respecting the preferences of other people.

While assertiveness in isolation may not be highly correlated with criminal offending or recidivism, skill deficits in this area may promote negative outcomes when combined with other skill deficits (e.g., problem-solving skills, inter-personal conflict resolution). Assertiveness may interact with other skills and personality dispositions. For example, without assertiveness skills, offenders who have otherwise good problem-solving skills are unlikely to successfully implement good solutions to interpersonal problem situations. While unassertive non-offenders may be able to avoid criminal alternatives, individuals who are prone to making criminal choices may greatly benefit from increases in assertiveness. Therefore, until strong evidence regarding the lack of predictability of assertiveness becomes available, it appears that assertiveness should be retained as an indicator within the personal/emotional needs dimension.

Neuroticism/Anxiety

Most definitions of neuroticism make reference to the neurotic as experiencing guilt and frequently anxiety. For this reason, we include the emotion of anxiety with neuroticism in our review of relevant studies. Although anxiety and neuroticism are not always used interchangeably in the literature, we have noted a tendency for the term anxiety to replace neuroticism in the more recent research. Generally, neuroticism refers to a more pervasive personality trait that includes such features as ongoing anxiety and worrying, as well as insecurity, nervousness, and emotionality.

Admittedly, as a feature of personality, neuroticism is a difficult construct to define. In some cases, individuals involved in discussions about neuroticism may be using different conceptualizations of the construct. Even more problematic is the conceptualization of how neuroticism might be associated with criminal behaviour. Nevertheless, there has been considerable interest in the construct of neuroticism in the criminological literature. Generally, correctional researchers have tended to view neuroticism and anxiety as indicators of personal distress. In the earliest conceptualizations, it was frequently believed that those who suffered from neurotic or anxious symptoms might resolve their inner conflict through aggressive outbursts of criminal activity. The neurotics involvement in crime was often considered incidental and the notion of "outbursts" referred to his/her usual tendency to act in pro-social ways. The construct of "over-controlled" hostility, discussed in relation to assertiveness above, has also been linked to neuroticism with a similar explanation of how criminal activity might develop.

Andrews and Bonta (1994) have traced the thinking about neuroticism and crime to Freudian theory. They note that the neurotic offender has generally been viewed as an offender sub-type which is relatively rare. They argue that the neurotic offender was viewed as having an "overactive" superego who acted

out of a desire to be punished for previous criminal activities. Hence, criminal activity is used as an attention seeking device to relieve inner conflicts arising from guilt about real or contemplated past crimes. In an attention-seeking manner, the neurotic may also use criminal acting out as a way of punishing family members or others who have conflicted relationships with the offender.

Given that the neurotic offender has been viewed as a sub-type to explain some instances of criminal offending, it is not surprising that researchers have not been able to show strong links between general measures of neuroticism and criminal offending. There are a number of studies that have compared the neuroticism scores of offender and non-offender samples in both adult and juvenile offenders. There are also a number of studies which have examined presumed links between neuroticism and recidivistic behaviour. Generally, the data provide mixed and conflicting evidence of a relationship between neuroticism and anxiety and criminal behaviour.

As a starting point, there has been some meta-analytic work in this area. For example, in their review of predictors of recidivism, Gendreau, Little and Goggin grouped neuroticism and anxiety under the category of personal distress. As mentioned earlier, this general category was not predictive of recidivism in a large number of studies ($r = .05$). In addition, Hanson and Bussière (1996) failed to find a significant correlation between anxiety and recidivism in their review of predictors among sex offenders. In fact they found that the direction of the correlation between anxiety and recidivism changed as a function of the particular outcome measure being examined. The average correlations between anxiety and sexual recidivism, general recidivism and anxiety was .07 and .08 respectively. Although the average coefficients were not significant, this suggests a weak positive relationship between anxiety and recidivism. However, the average correlation was negative (-.07) for anxiety and non-violent sexual recidivism – suggesting that anxious sex offenders are slightly less likely to engage in violent (non-sexual) recidivism.

Below we provide selected examples of studies that lead to the conclusion that there is inconsistent evidence regarding the relationship between neuroticism/ anxiety and criminal offending. In examining this literature, there appeared to be a greater volume of research based on juveniles as opposed to adult samples. We begin with some examples of studies drawn from the juvenile delinquency literature.

Saunders and Davies (1976) reported on a follow-up study of British delinquents including a sample of probationers and youth who had served time at a detention centre. They administered the Jesness scales to measure a series of personality and adjustment measures in the boys prior to release from custody and at the beginning of their probation sentences. Among the delinquents who had been incarcerated (n=385), 12-month post-release outcome was unrelated to a number of scales which measured neurotic tendencies including social anxiety, repression and withdrawal. Among the probationers (n=454), social anxiety was not related to success or failure on probation. However, there was a tendency for probation subjects who had exhibited withdrawal patterns to do more poorly while those who had higher repression scores to be more successful on probation.

Eysenck and McGurk's (1980) study of delinquent and normal youth also provided comparative data on the Eysenck's Neuroticism Scale. In this study, neuroticism was significantly higher among the delinquent sub-sample. The delinquents, as noted earlier, were drawn from a detention centre sample. Interestingly, in both the normal and delinquent samples, neuroticism and empathy scores were positively related ($r = .33$ and $r = .40$, respectively). Hence there was a suggestion that individuals scoring high on neuroticism also exhibited higher empathy scores. There is some evidence that lower empathy, as discussed in the review of studies on this construct, may be related to criminality.

Another study conducted in Australia using the Eysenck scales failed to replicate the principle findings with respect to neuroticism that were noted by Eysenck and McGurk (1980). Putnins (1981) compared delinquents, non-offenders and new delinquents in a high school sample. He found no differences on the neuroticism scale for these three groups. In a second sample reported in the same monograph, Putnins reported on a follow-up sample of youth who had served time in a correctional centre or spent time on juvenile probation. However, the neuroticism scale failed to distinguish between recidivists and non-recidivists after 12 months of follow-up.

Another British study reported by McGurk, Bolton and Smith (1978) measured a number of personality and adjustment factors including several measures of constructs related to neuroticism. In this recidivism follow-up sample of delinquents who had served time in a detention centre, the researchers employed a number of personality scales including the popular 16PF. They found that measures of guilt, self-criticism, emotional stability, alienation, apprehension, and discomfort were all unrelated to recidivism within a two-year period. In addition, 16PF measures designed to identify individuals who were "tense" and "controlled" also failed to discriminate between the two outcome groups.

A study of an American sample of delinquent adolescents was reported by Lindgren et. al. (1986) who used Minnesota Multiphasic Personality Inventory (MMPI) sub-scales to operationalize neurotic tendencies. The delinquent youth were residents of an evaluation unit at a juvenile home when they completed the measurement procedure. The authors relied on multiple sources (court, school, family, social service workers) to measure behavioural and delinquency outcomes among the juveniles. In this study, neuroticism was associated with more positive outcomes among the juveniles. The authors also noted that higher discrepancy scores between neurotic and psychotic sub-scales also predicted more positive outcomes.

A final more recent study from the delinquency literature provides additional evidence of the diversity of findings that have occurred with respect to the predictability of neuroticism (Osuna and Luna, 1993). This Spanish sample of incarcerated male and female juveniles involved a cross-sectional design to assess behavioural problems, number of arrests and drug use. In this sample neuroticism, as measured by the Eysenck scales, was correlated at significant levels with the indicators of anti-social behaviour. The correlations ranged from .42 with behavioural problems, .24 with number of previous arrests, to .52 with drug use. The authors also reported highly similar results using an alternative measure of anxiety. Hence, in this Spanish sample (n=303), neuroticism and anxiety appeared to be at least moderately correlated with indicators of delinquent behaviour. The authors argued that neuroticism and anxiety in their sample was a response to a "hostile environment", presumably referring to difficult family situations in which the juveniles may have been involved. The strength of the results in this sample, and the general discrepancy with findings from other studies examined above, suggest that some cultural factors unique to this Spanish sample may be accounting for the results.

As noted above, there are fewer studies which examine the impact of neuroticism and anxiety on correctional outcomes for adult samples. As with the literature on juveniles, the existing adult literature does not furnish strong evidence that neuroticism and anxiety should be regarded as critical factors in a criminogenic needs assessment. For example, two well-designed Canadian studies providing follow-up data on probationers and incarcerated provincial offenders failed to show links between neuroticism and recidivism. The Andrews et. al. (1986) study mentioned earlier reported a non-significant correlation between neuroticism and success on probation ($r = .21$). Wormith (1984), who tested for the effects of pre-test, post-test and change scores, also found no evidence of a significant relationship between neuroticism and post-release success in his sample of offenders who had served provincial sentences.

Another study which we described earlier (Furnham and Saipe, 1993) examined neuroticism scores in a study of drivers which was designed to identify factors that predicted convictions for traffic violations. These researchers found that individuals who scored high on neuroticism reported fewer driving convictions than individuals who scored lower on neuroticism. The popular Eysenck measure was also used to operationalize neuroticism in this study.

Although there were few studies focusing on female samples within the personal/emotional needs literature, one possibility is that neuroticism and anxiety may be one factor that exhibits different predictability across gender. Long, et. al. (1984) reported on predictors of recidivism among females who had been incarcerated in North Carolina (n=61) and included a popular measure of anxiety in their battery. The authors used their cross-sectional design to examine factors that distinguished between first-time and recidivist female offenders. However, they failed to find any differences on anxiety scores when they examined the two groups. The researchers employed both "state" and "trait" measures of anxiety and reported no differences in recidivist and non-recidivist scores for either measure.

Finally, one earlier study of adult offenders approached the issue of neuroticism in a different manner. Sinclair, Shaw and Troop (1974) examined the possible moderating effects of neuroticism on treatment outcome for a sample of British prisoners who were involved in a correctional program. The research involved random assignment of equal-sized groups of prisoners (total n=150) to a caseworker enhancement and control condition. The caseworker condition involved more frequent contact (1 hour per week) with a caseworker in the six months prior to release from prison. The casework condition was meant to produce a counselling or psychotherapeutic effect on the prisoners who participated. One of the hypotheses was the neurotic offenders would be much more responsive to the casework control condition because their personality

dispositions were more amenable to the psychotherapeutic style of the contacts. The authors also predicted that psychopathic offenders would show fewer gains as a result of the casework enhancement. While the intervention had a positive effect on post-release recidivism, the researchers found that the personality disposition variables failed to predict treatment success. Hence, neuroticism failed to serve as a moderating factor in treatment outcome.

An issue in deciding whether or not neuroticism/anxiety should be included as a criminogenic factor within the personal/emotional needs domain, is the critical question concerning the direction of scoring. Given the inconsistencies in the available results from research, it is not clear whether high neuroticism/anxiety be considered a criminogenic factor, or whether low neuroticism/anxiety be considered a criminogenic factor. This situation obviously dictates that neuroticism/anxiety not be included as a criminogenic factor.

This conclusion is not meant to imply that the existence of high neuroticism and anxiety should not be considered a "need" in correctional settings. Existing research based on federal offenders indicates that for many inmates, the existence of anxiety is an important issue. For example, in the large scale mental health survey conducted by CSC in 1989 Motiuk and Porporino (1992) found that 44.1% of federal inmates reported lifetime occurrence of anxiety disorders using stringent Diagnostic Interview Schedule (DIS) criteria. In addition, 27% of the inmates reported the presence of an anxiety disorder in the last year and 11.8% within the last two weeks. Among federal female inmates who had completed a parallel mental health survey, Blanchette and Motiuk (1996) reported that 19.7% reported lifetime presence of an anxiety disorder. In terms of the mental health needs of offenders, therefore, symptoms associated with anxiety and personal distress related to neuroticism may be an important target of intervention. In addition, on an individual basis, neurotic tendencies might also be assessed as playing a unique contributing role in the criminal cycle

of particular offenders. However, on the basis of available evidence it seems unlikely that neuroticism would enhance the predictive power of the personal/emotional needs domain.

Aggression, Anger, Hostility

We group the three constructs of aggression, anger, and hostility together because of their obvious overlap and because of the similarity in their description in the literature. While aggression often appears as a separate construct in many studies, anger and hostility are frequently discussed together. Hostility is the indicator used within the personal/emotional needs dimensions. However, we note that in recent years the construct of anger is more frequently referenced than hostility. Therefore, we have included a review of the relevant research on anger. It should also be noted that the behavioural indicator "low frustration tolerance" is also related to the aggression and anger/hostility constructs. Therefore, we have not conducted a separate review for the frustration tolerance indicator. Various measures which fall within aggression and anger/hostility categories have been shown to differentiate between offender and non-offender samples and have been used to predict criminal behaviour generally, and violent activity more particularly. Our review suggests that given the predictive validity of these constructs, indicators of aggression and anger/hostility should be included in the assessment of criminogenic needs.

Carlson, Marcus-Newhall and Miller (1989) have supplied a succinct definition of aggression which is generally reflected in most discussions of the construct in the research literature. They suggest that aggression represents "an intentional attempt to harm another person".

While most authors would agree on this definition, one of the limitations of the correctional literature involves the frequent failure of researchers to specify how they have measured the construct of aggression. In some cases ratings are

made on the bases of aggressive behaviour recorded in case files while on other occasions the measures are based on observational ratings supplied by judges. In other cases, self-report instruments are used to assess the extent to which an individual has engaged in harmful behaviour toward others or harbors intentions to engage in such behaviour. While each type of measure is likely to contain some degree of validity, often researchers fail to specify the types of behaviour that are included as indicators of aggression in both rating and self-report scales. Nevertheless, there does appear to be a great deal of consistency of findings across the various measurement approaches and across the various outcome variables that are examined.

We begin by examining a selection of studies that have been conducted with juvenile samples. The literature review conducted by Loeber and Dishion (1983) and Loeber (1987), clearly points to the importance of early aggression displayed by elementary school children in predicting later conduct problems and delinquency. For example, among the seven predictive studies reviewed by Loeber and Dishion (1983) which included early measures of aggressive behaviour, the authors reported a strong positive relationship with later delinquent activity. The relative improvement over chance (RIOC) statistics ranged from 51.4% to 16.4% with a median of 25.2%. The strength of the relationship between aggression and later problematic behaviour is well illustrated in the cohort research reported by LeBlanc and his colleagues (LeBlanc, Côté & Loeber, 1991). They found aggressive criminal activity measured at age 12-16 to predict later aggressive criminal activity measured two years later. The researchers observed the predictive effects in both delinquent and non-delinquent sub-samples. In addition to the stability of aggressive behaviour, the researchers also noted that many aggressive youth engaged in more diverse criminal behaviours, a phenomena they describe as progression (e.g., theft, vandalism, drug use, etc.).

Two earlier British studies reporting on post-release recidivism of delinquent boys provide additional evidence of the predictive power of aggression. Saunders and Davies (1976), as reported earlier, examined predictors of recidivism among juvenile probationers and incarcerated offenders. They found that higher scores on the Jesness scale of "manifest aggression" predicted recidivism in both the probation and post-release custody samples. Similarly, McGurk, Bolton and Smith (1978) found that 2 out of 4 measures of hostility significantly predicted post-release recidivism. Their sample was composed of boys who had been released from a detention centre and followed-up for a period of two years after release.

An interesting 18-year panel study recently reported by a Finnish researcher (Viemerö, 1996) provides additional evidence of the strength of the relationship between aggression and criminal behaviour. In this study 220 school children were first assessed at ages 7-9 years and reassessed at 8 additional time points until they were aged 25-27 years. Early measures of aggression were based on self, peer and teacher ratings. Each of the earlier aggression measures predicted self-reported aggressive behaviour at ages 15-17 years. In addition, Viemerö found that aggression measures taken at various points while members of the sample were students predicted later criminal behaviour in young adulthood (aged 25-27 years). Each of the measures, including self, peer, teacher-rated aggression, were shown to have predictive power over the long follow-up period. Criminal behaviour was assessed on the basis of police arrest records for the final data collection point when the subjects were young adults.

Another Canadian study demonstrating the predictability of childhood aggression on later criminality was reported by Harris, Rice and Quinsey (1993). This follow-up study was based on a large sample of released male offenders (618) from a forensic psychiatric hospital. The data for the recidivism outcome

component of the study was based on new data provided from official sources (e.g., RCMP records), while historical information about the subjects was gathered retrospectively from case file sources. However, the historical and recidivism information was collected by separate teams of coders. Harris and his colleagues found that measures of childhood aggression rated on the bases of material contained in inmate files was predictive of post-release recidivism. It should be noted that the examination of post-release criminal behaviour in this adult sample was limited to violent crime. The authors also noted that offenders who had previously been convicted of a violent offence were also more likely to recidivate with a violent offence.

While the empirical links between childhood and later behaviour suggests an important role of aggressive behaviour in the etiology of offending, evidence of the predictability of aggression measured in the adult years is critical to establishing whether or not this construct should be regarded as a criminogenic need. Several studies provided such evidence. An interesting study by Welsh and Gordon (1991) used a laboratory approach to study aggressive behaviour. They used a number of measures of aggression, anger and hostility assessed on a self-report basis. The sample under investigation involved federal offenders incarcerated at a psychiatric centre (n=51). A behavioural measure of aggression was based on judge ratings of inmate aggression exhibited during role plays. Each inmate was presented a series of role play scenarios which were designed to elicit responses that could involve aggressive behaviour. The scenarios were designed to mimic typical situations that occur in institutional living and street life following release. The authors found that ratings of aggressive behaviour based on the role-play observations were correlated with a number of measures including self-report scales designed to measure anger, hostility, and aggression. While the outcome criteria for this study did not concern actual criminal or aggressive behaviour, the data suggests very clearly that aggressive behaviour is predictable on the basis of personality measures designed to assess aggressive tendencies.

Another study completed by Rice and Harris (1996) examined several predictors of post-release recidivism in a sample of offenders who had been convicted of fire-setting. Similar to the file review study by this group of researchers reported above, the authors correlated file-based historical data with information on the post-release status of their subjects. In this study, aggression was assessed with respect to both childhood and adult occurrences. The authors found that both childhood and adult aggression scores predicted recidivism in their sample. There was some discrimination in the prediction with respect to the type of outcomes. For example, childhood aggression was correlated with both violent and non-violent recidivistic crime, but not with new crimes involving fire-setting. Adult aggression, on the other hand predicted violent behaviour but was unrelated to non-violent crimes. In addition, it was reported that adult aggression was weakly related to fire-setting crime in a negative direction.

A final study based on a New Zealand sample which was described earlier, is also of interest. In their prospective sample, Krueger et al., (1994), used reports of criminal behaviour based on self-report, informant, police and court records. The researchers found that self-reported aggression was correlated with all four sources of measurement of criminality including both subject report and official criminal records. Of the personality measures used, the aggression scale appeared to be the most potent predictor of future criminal behaviour.

Anger measures have also been shown to provide predictive information with respect to criminal behaviour. Generally, the measurement of anger has been operationalized using self-report measures that attempt to assess the extent to which subjects report ongoing feelings of anger and the types of situations that appear to arouse their anger. Some measures have also been

developed which attempt to assess how individuals express their anger (e.g., verbally, physical aggression, passive aggressive techniques, etc.). Among one of the measures that remains popular after more than 40 years is the Buss-Durkee Hostility Inventory (Buss & Durkee, 1957), which measures a variety of types of anger and hostility. While there are a number of studies that demonstrate the ability of self-report anger measures to differentiate between criminal and non-criminal populations, there have been fewer studies that demonstrate a link between anger and future criminality. Although their review of the literature pertained only to recidivism among sex offenders, Hanson and Bussière (1996) reported that anger was unrelated to general recidivism and sexual recidivism. At the same time their meta-analysis involved only 3 studies that reported on the link between recidivism and anger among sex offenders.

Despite the need for more research on anger and recidivism, anger has become a popular target of treatment programs in correctional settings for both juvenile and adult offenders. For example, Lochman (1992) reported reductions in alcohol/drug use, and increases in self esteem and social problem-solving skills as a result of participation in an "anger coping" program for aggressive boys. Using booster sessions following the primary intervention, Lochman also reported positive effects of the program on delinquency and classroom behaviour. A study reported by Hunter (1993) showed positive effects of an anger management intervention on a group of Canadian federal offenders. The offenders made positive changes on a variety of measures including anger and hostility, impulsivity, risk-taking, self-esteem and depression. Reporting on an additional federal sample treated with a cognitive behavioural anger management intervention, Hughes (1993) demonstrated positive changes on a variety of pre-test/post-test measures. In addition, the author indicated that the treated group had lower recidivism than a non-randomized comparison group with similar anger problems. Recent interest in developing and implementing anger management programs in correctional settings stems from hypotheses

that reductions in anger will result in reductions in violent behaviour. For this reason, the development and testing of methods for assessing anger and management problems in correctional populations has been the focus of considerable research activity (Kroner & Reddon, 1992; Kroner, Reddon & Serin, 1992).

There have been reports that anger measures discriminate between offender and non-offender groups. For example, Selby (1984) used several popular self-report measures of anger to discriminate between violent and non-violent criminals as well as providing norms for comparisons with non-offender groups. Included among the measures were the Buss-Durkee Hostility Inventory, the Novaco Anger Inventory, the MMPI Overt Hostility Scale and the MMPI Hostility Control Scale. The subjects in this study were 204 incarcerated offenders who were serving time in the State of California for a variety of offences. The Buss-Durkee and Novaco measures discriminated between the violent and non-violent offenders in the predicted direction, i.e., offenders convicted of violent crimes had higher scores than non-violent offenders. In addition, the latter two scales also significantly differentiated between the incarcerated offenders and normative samples from non-criminal populations. The MMPI Hostility Control scale also differentiated between the offenders and non-offenders, but not between violent and non-violent offenders. The reverse pattern of results was reported for the MMPI Overt Hostility Scale.

A final study provides additional descriptive information about the anger in correctional populations. Maiuro, Vitallian and Cahn (1987) examined the validity of a brief (6 item) anger and aggression measure modeled after the more lengthy Buss-Durkee Inventory. They reported on a series of sub-samples (n=401) in which they examined the scores for wife batterers, general assaulters (i.e., those who assaulted non-intimates), mixed assaulters (i.e., batterers and general assaulters), and non-assaultive control subjects. First of all, the authors

demonstrated that the 6-item scale (Brief Anger Aggression Questionnaire, BAAQ) was correlated with its parent Buss-Durkee inventory (r = .78). Maiuro and his colleagues found no differences between the three groups of assaultive groups on the BAAQ. However, differences between the combined assaultive group and normal controls was highly significant in the predicted direction.

While there remains a need for research on the relationship between anger management skills and post-release recidivism, the abundance of evidence regarding differences between criminal and non-criminal populations suggest that this is an important construct. It is likely that lack of anger management skills represents a high risk deficit for many offenders. Inability to control anger may account for much of the violent crime for which recidivist offenders are responsible, especially those who are prone to violent behaviour when angered. For this reason it is recommended that indicators of anger be included in the personal/emotional needs domain. Again, tolerance of frustration, which has not received much attention in the research literature, is obviously a construct that is related to anger management problems. Therefore, we would argue that frustration tolerance would also serve as a criminogenic need for many offenders. With respect to aggression, we believe there is ample evidence to suggest that offenders who have aggressive tendencies are at higher risk of maintaining criminal activities following release. The evidence also suggests that violent behaviour is predictable on the basis of pre-release measures of aggression. As such, it appears that aggression should be maintained as a criminogenic need indicator within the personal/emotional needs domain.

Risk-taking

Although separate constructs, risk-taking and impulsivity often occur together in discussions of criminal behaviour (Field, 1986). While impulsivity appears to be best understood as a cognitive deficit (e.g., inability to suspend

action before making rational choices), risk-taking refers to a preference for activities involving risk or a high probability of dangerous outcomes. A number of definitions have been used to describe a predisposition toward risk-taking (e.g., Field, 1986): sensation-seeking, excessive need for stimulation, intolerance of boredom, venturesomeness.

The latter descriptor was used to operationalize the construct in the Eysenck scales (Eysenck, et. al., 1985). The items used to measure venturesomeness focus on a preference to engage in risky behaviours, particularly sporting activities that have a risk-taking component (e.g., mountain-climbing, parachuting). However, more general preferences for risky behaviours such as frightening activities and interest in change and diversity in sensation are also included among the items. Although the Eysenck impulsivity scale has consistently differentiated between criminal and non-criminal populations, the construct of venturesomeness has shown less discrimination. For example, Eysenck and McGurk (1980) found that delinquent detainees and normals did not differ on the venturesomeness scale. Thornton (1985) replicated this finding using a new sample of junior detention centre trainees.

Other approaches to assessing risk-taking, however, have been more helpful in predicting criminal behaviour. Andrews et. al., (1986) found that a self-report measure of sensation-seeking was positively correlated with recidivism ($r = .22$) in their sample of probationers. Using a Swedish sample, Dahlback (1990) studied risk-taking using roulette games to operationalize the extent to which subjects would be willing to engage in "high stake" risky behaviours". The author reported that total risk-taking responses on the roulette exercises was highly correlated ($r = .62$) with self-reported criminal behaviour in the sample of university students (aged 21-26 years).

In the Horvath and Zuckerman study (1993) reported earlier, "sensation-seeking" was measured using a self-report questionnaire that included items tapping thrill and adventure seeking, experience seeking, disinhibition, and boredom susceptibility. Using their American undergraduate sample, the authors found that their measure of sensation-seeking was positively correlated with a number of self-reported risky behaviours including criminal activity ($r = .53$), minor violations ($r = .43$) and risky behaviours within the financial and sport realms. In a separate study using some of the same components to measure sensation-seeking (thrill and adventure seeking and boredom susceptibility), Furnham and Saipe (1993) studied sensation-seeking as a predictor of driving convictions in a mixed professional sample of individuals which also included university undergraduates. Number of driving convictions was correlated with both the thrill factor ($r = .19$) and boredom susceptibility ($r = .31$).

A final study worthy of mention involves the Krueger et. al. (1994) cohort study of 18 year old New Zealand youth. A measure they describe as "harm reduction" was used to assess a low propensity for risk-taking activities. While this measure was correlated with self-reported criminal behaviour, harm reduction was unrelated to measures of criminal behaviour based on informant, police, and court sources.

The frequently-used Eysenck scale referred to as "venturesomeness" does not appear to be helpful in distinguishing between criminal and non-criminal samples. However, there appears to be sufficient evidence to suggest that a propensity for risk-taking is correlated with criminal behaviour. While most of the evidence involves correlations between self-reported criminal behaviour and self-reported preference for risky behaviour, at least one study provided direct evidence of a link between sensation-seeking and recidivism. Generally, the data suggest that risk-taking should be included in assessing personal/emotional needs in offender samples.

Our review of the literature suggests that, at least conceptually, the activity of gambling may be included under the category of risk-taking. We are not referring to occasional gambling in this respect, but rather more repetitive gambling that involves the gambler deriving rewards from the risk element of the behaviour. There is some limited evidence on the relationship between gambling and criminal activity in the juvenile literature. Vitaro, Ladourceur and Bujold (1996) found higher levels of delinquency among children who had reported gambling in their sample of 13-year old boys from the province of Quebec (n=631). Gamblers reported more delinquent acts than non-gamblers across the categories of fighting, drugs/alcohol, vandalism, and theft. Templer, Kaiser and Siscoe (1993) reported on gambling problems among a medium security prison population in Nevada. They noted that about one-quarter of the inmates in their sample scored in the "pathological" range of their self-reported gambling questionnaire. It is notable that the authors found a positive relationship ($r = .24$) between gambling propensity and the psychopathic deviate scale of the MMPI. Although the evidence is limited, it seems likely that gambling is a criminogenic need and an indicator of risk-taking behaviour. Therefore, we recommend that problematic gambling remain an indicator of criminogenic need in the personal/emotional need dimensions.

Coping

The Coping sub-component consists of three indicators: copes with stress poorly, poor conflict resolution, and manages time poorly. The "coping" sub-component is a broad construct and sufficiently well defined bodies of research literature could not be identified to evaluate the criminogenic status of each indicator. The construct of coping is multi-faceted and the general literature has focused on the variety of effective (e.g. relaxation exercises) and ineffective (e.g., avoidance) components that individuals use to confront stressful situations (e.g., see Lazarus, 1966). There has been some general work done on the

coping strategies of federal prison inmates (Zamble and Porporino, 1988). However, this work does not correspond well to the indicators outlined for the coping sub-component.

However, it can be argued that elements of coping strategies and skills are represented in some of the other sub-components of the personal/ emotional domain. For example, the indicator "copes with stress poorly" overlaps to some extent with constructs such as problem-solving and anger management skills and frustration tolerance which are described under the "cognitive" and "aggression" categories. "Poor conflict resolution" can be incorporated under inter-personal skills which is also grouped in the cognitive category. "Manages time poorly" can be viewed as a self-control construct that can be placed with "impulsivity". For example, in their follow-up sample of released federal offenders Zamble and Porporino (1990) found a relationship between "living day-to-day without planning" and recidivism ($r = .21$). Their measure suggests the inability to manage time and to organize daily events in a planful and deliberate way. Again, while the specific "time-management" construct lacks empirical research with criminal populations, it would appear that this item can be viewed as a component of impulsivity.

Given the discussion above about the unavailability of research on this area with correctional populations, we believe that the coping construct is best combined with other sub-categories. While some of the indicators may be "criminogenic" in nature, we believe that there is not enough evidence to suggest that deficits in "coping" skills are criminogenic in nature.

Sexual Behaviour

Sexual Preference and Sexual Attitudes

Included among the indicators of sexual behaviour in the personal/emotional needs domain are dysfunction, identity, preference, and attitudes. Unfortunately, there is a great deal of inconsistency with regard to how some of these constructs are measured in the research literature. This applies in particular to the construct of sexual attitudes. While usually researchers refer to "inappropriate sexual attitudes" when they reference this construct, the specific items used for operational purposes are frequently not specified. For example, Smith and Monastersky (1986) used a measure of "unhealthy sexual attitudes" which predicted reoffending in their sample of juveniles. Smith and Monastersky suggested that unhealthy attitudes refers to "a naïve assertion by the offender that any sexual behaviour is abnormal and to be avoided". In another study of juveniles, Kaplan, Becker and Tenke (1991) included such diverse indicators as attitudes toward birth control, use of force in sex, premarital intercourse, satisfaction with personal sexuality, and clarity of sexual values under the category of "attitudes". Hanson, Gizzarelli, and Scott (1994) measured the constructs of male sexual entitlement and acceptance of sex with children in their study of the attitudes of incest offenders. The constructs of identity, preference and dysfunction, on the other hand are characterized by greater specificity. In particular, sexual preference is now routinely measured with considerable validity using phallometric assessment techniques.

The vast majority of the research literature on the predictability of sexual behaviour with respect to criminal behaviour and recidivism is limited to the study of sex offender populations. Generally, indices of sexual behaviour, sexual attitudes, and sexual dysfunction are not measured in predictability studies of general offender populations. For this reason, our review was limited to studies that pertain specifically to the prediction of criminal behaviour among sex

offenders. We relied heavily on the recent review on the predictors of recidivism among sex offenders conducted by Hanson and Bussière (1996). This review included 61 prospective datasets in which predictors of general and sexual recidivism were examined. They reported on all categories of predictors within this body of literature which included three or more studies.

With respect to sexual recidivism, Hanson and Bussière found that deviant sexual preference (unspecified) based on phallometric assessment was correlated at the .20 level in a total of 5 studies. Sexual preference for children based on phallometric measures was also correlated with sexual recidivism (r = .20) using a sample base of 7 separate correlations. On the other hand, phallometric assessment of preference for rape was uncorrelated (average r = .00) with sexual recidivism based on 4 studies. The reviewers also reported that, based on 4 studies, the average correlation between deviant sexual attitudes and sexual recidivism was .09. There were fewer studies in which sexual preference was examined in relation to general recidivism. However, Hanson and Bussière reported that sexual preference for children was correlated with general recidivism at the .19 level based on 3 studies for which data were available. The other predictor for which data was available was deviant sexual attitudes. However, the correlation was low and insignificant (r = -.03) for this indicator.

Aside from these predictors within the sexual behaviour component, there is no other strong evidence to recommend the inclusion of separate indicators of criminogenic need. According to the Hanson and Bussière review, there is ample evidence that prior sexual offences predict both general recidivism (r = .12 based on 15 studies) and sexual recidivism (r = .19 based on 29 studies). In their follow-up of released federal sex offenders (n=570), Motiuk and Brown (1996) reported similar correlations between prior sex offences and general recidivism (r = .16) and sexual recidivism (r = .20). While this predictor falls within the sexual behaviour component of the personal/emotional needs domain,

prior sexual offences is a static indicator of criminal history and would not normally be categorized as a criminogenic need.

The data reviewed with respect to sexual behaviour supports the inclusion of deviant sexual preference and deviant sexual attitudes as indicators of criminogenic need. However, it is cautioned that the research reviewed referred to samples of known sex offenders. Given the specific nature of sex offending, and the usual interest in sexual recidivism in particular, sexual behaviour items might be more appropriately examined as a separate category of assessment with the sex offender population only. For example, the sexual behaviour items might be part of a larger second stage assessment component that is conducted after an offender has been identified as a sex offender. For these reasons, we do not recommend the inclusion of the sexual behaviour items as criminogenic factors within the personal/emotional needs domain.

Mental Ability

Functioning

Mental ability as a predictor of delinquency, adult criminality, and recidivism has been a frequent subject of controversial discussion among researchers interested in studying crime. The current review does not provide sufficient scope to review the issues and studies in detail here. However, there has been convincing evidence regarding a link between mental ability and school achievement measured in youthful samples and subsequent delinquent behaviour. For example, Loeber and Dishion (1983) reviewed a number of prospective studies that linked ability and school achievement to later delinquent behaviour. Waldie and Spreen (1993) have also cited a number of studies showing links between delinquent and criminal behaviour and the presence of learning disabilities. Andrews and Bonta (1994) have also reported on a number of studies that have shown links between delinquency and intelligence as measured by a variety of I.Q. tests.

A good example of research in this area of mental ability and delinquency involves a study by Dishion et al. (1984) in which a series of measures of academic skills were related to official and self-reported delinquency among school children. They found that reading achievement, verbal intelligence, and mother-rated school competence each predicted both official and self-reported delinquency in their sample of adolescent males.

The identification of studies reporting on the relationship between mental ability and criminal activity in adult samples is difficult. In many cases, such measures are concealed within the studies as secondary concerns and literature searching approaches failed to identify relevant studies. However, the review by Gendreau and his colleagues of predictors of adult recidivism identified a number of studies in which correlations between intellectual functioning and recidivism were reported. Overall, they reported an average correlation of .07 between intellectual functioning and recidivism based on 32 reported correlations. The authors noted that intellectual functioning included measures such as the Wechsler Adult Intelligence Scale (WAIS), Raven, measures of reading level, and learning disabilities. In summary, their data suggest a weak but positive correlation between intellectual functioning and recidivism among adult offenders.

In their study of suspension outcomes among federal offenders, Motiuk and Brown (1993) reported an insignificant correlation (.08) between case management rated learning disabilities and suspension after six months on release. In the same study, they also reported an insignificant correlation (.08) between suspension and "low mental functioning". Currently "mental deficiency" is used as the indicator within the personal/emotional needs dimension to operationalize needs within the mental ability component. It is not clear from the available evidence whether this item would greatly contribute to the predictability of recidivism. For example, mental deficiency, if operationalized in terms of

organicity, occurs at a relatively low rate within the federal offender population. Motiuk and Porporino (1992) found a lifetime prevalence of organic brain syndrome of 4.3% in the general offender population using wide DIS criteria. However, using stringent criteria, the survey estimated that only 0.1% of the federal offender population suffered from organic brain syndrome. Again, taken together, the available evidence does not provide strong support for the inclusion of mental deficiency as a criminogenic need within the personal/emotional needs dimension.

Mental Health

Mental Disorder

Andrews and Bonta (1994) note that "mentally disordered offenders" are a sub-group of offenders who are widely discussed and perceived as numerous and dangerous by the public. Often discussions of "mentally disordered offenders" involve some confusion about the definition of this group. In this review we generally refer to "mentally disordered offenders" as individuals who suffer, or have suffered, from one of the major disorders classified by the Diagnostic and Statistical Manual of Mental Disorders (e.g., major depression, schizophrenia, and other psychoses). Generally, offenders with mental disorders are viewed as a dangerous sub-group that poses a high risk of post-release recidivism. In particular, popular views suggest that mentally disordered offenders are at highest risk of committing violent offences. Bonta, Law and Hanson (1997) have recently reviewed the research literature on mentally disordered offenders and we draw heavily on the results of their meta-analysis.

An important finding from the meta-analysis conducted by Bonta and his colleagues was that contrary to the notion that mentally disordered offenders are responsible for a higher rate of recidivistic crime, the data actually suggest the opposite. Based on a total sample of 11 studies that compared the recidivism rates of mentally disordered and non-disordered offenders, the review team

found an inverse relationship between disorder and recidivism. The average correlation for 3 Commonwealth samples was -.34 while the correlation was -.14 for 8 studies conducted in the United States. The finding that mentally disordered offenders were less likely to recidivate than non-mentally disordered offenders held for both general recidivism and violent crime.

Recent examples of research that support this conclusion come from a U.S. study of released jail detainees and a Canadian sample of federal offenders. In the U.S. study based on a sample of 728 randomly selected releases, Teplin, Abram and McClelland (1994) found that offenders without disorders had a slightly higher probability than mentally disordered offenders of reoffending with any violent or major violent crimes after six years of follow-up. Porporino and Motiuk (1995) compared the post-release outcomes of a matched sample of mentally disordered and non-disordered offenders who had served federal terms in Canada (n=72). While mentally disordered offenders tended to have more conditional release suspensions, they had considerably fewer readmissions and new convictions after follow-up periods of 6 and 24 months.

Given this evidence it appears that the presence of a mental disorder is not a good indicator of criminogenic need within the personal/emotional needs dimension. The available evidence would suggest that if mental disorder is to be included, it should be weighted as a positive factor in relation to risk of recidivism. While this approach might have some empirical validity, in practical terms the positive weighting of such an indicator may cause some confusion. While the presence of a mental disorder may not be a "criminogenic need", for most mentally disordered offenders this condition would represent a mental health care need that would require attention within the correctional system.

Hospitalization

Another indicator that can be grouped within the mental health category is history of psychiatric hospitalization. For purposes of parsimony, we report on the predictability of hospitalization under the mental health category rather than the principal component of "Interventions". We were not able to identify a body of literature that included previous psychiatric hospitalization as a risk factor in studies of recidivism. However, there are a number of studies which specifically address this variable within mentally disordered offender populations (e.g., series of studies by Rice and her colleagues; Rice and Harris, 1996; Harris, Rice and Quinsey, 1993). Bonta, Law and Hanson (1997) also identified a number of studies that examined hospitalization history in relation to recidivism. They found an average correlation of .15 between previous hospital admissions and general recidivism based on 10 studies for which data was reported. There was a weaker, but also positive, average correlation between days hospitalized and general recidivism (r = .06) in 12 studies. In terms of violent recidivism, the average correlation for history of hospitalization was .10 in a small sample of studies (n=4). Interestingly, based on a small number of studies again (n=4), Bonta and his colleagues reported an inverse average correlation of -.09 between days hospitalized and violent recidivism.

The obvious difficulty with these data when assessing the potential predictability of psychiatric hospitalization as a criminogenic need, involves the specificity of the data with respect to mentally disordered offenders. While a history of psychiatric hospitalization may predict future trouble with the law among offenders who have already been diagnosed as mentally disordered, it is unlikely that this predictability would apply to a more general population of offenders. For this reason, we would not recommend that psychiatric hospitalization be included a criminogenic need within the personal/emotional needs domain.

Interventions

As a set of personal emotional needs factors, the principal component "Interventions" diverges considerably from the nature of categories represented within the remainder of the domain. We argue for the exclusion of "interventions" as indicators of criminogenic needs for a number of reasons. For this reason, we have not attempted to comprehensively review the relevant literature. We also acknowledge that the requirements of a review to adequately address the issue of the criminogenic status of intervention history would be beyond the scope of the current review.

However, we do offer some observations on the conceptual significance of this principal component within the personal/emotional needs dimension. Strictly speaking, participation in programs, having been prescribed medications, or having an assessment within the personal/emotional needs domain are not likely to be reliable predictors of recidivism. While a history of intervention may be predictive for some offenders, in other cases interventions may have been prescribed for offenders who do not demonstrate high needs in the personal/emotional area.

We also recognize that there may be some confusion about the direction of relationship between history of interventions and future recidivism. For example, having received a program (or prescribed medication) to address a particular personal/emotional need may be predictive of positive outcomes or negative outcomes. For example, if an offender has completed an "effective" program, his risk of recidivism may have been lowered as a result of participation. Alternatively, his participation in the program may be an indicator of a serious criminogenic need that was not adequately addressed by the intervention. As such, participation in the program may be a signal of continuing criminogenic need and consequently high risk to recidivate. Although the results are not easily interpreted, there is some available data from meta-analyses to

address the question of the predictability of treatment. Bonta, Law and Hanson (1997) report a correlation of -.06 between treatment history and general recidivism among mentally disordered offenders. However, given the arguments advanced above, it is difficult to interpret such a correlation. Similarly, Hanson and Bussière (1996) reported no correlation between length of treatment and sexual recidivism among sex offenders.

An important consideration in measuring participation in interventions is that not all programs work for all offenders, and that not all offenders who participate in programs actually require the given interventions. In addition, it is now very clear from meta-analyses of the correctional programs literature (e.g., Andrews et. al., 1990; Lipsey, 1995; Lipton et. al., 1998), that there is differential effectiveness across different modalities of treatment delivery.

DISCUSSION AND RECOMMENDATIONS

The principal findings of this review of the personal/emotional needs domain are the following:

- The state of the literature on personal/emotional needs factors remains under-developed particularly with respect to the predictors of recidivism, and especially with respect to dynamic predictors of recidivism.

- Within the existing literature there is sufficient evidence to recommend the elimination of some of the current principal components of the personal/emotional needs domain on the basis of a lack of evidence regarding their criminogenic influence.

- There is evidence in the literature to support a re-organization of the principal components of the domain and a streamlining through simplification and reduction in the number of sub-components.

- There is a need for more work in the area of operationalization of sub-components by the generation of specific indicators that are amenable to measurement based on available case management sources.

Below we elaborate on these conclusions in greater detail.

Overview of Findings

This literature review was not intended to provide an exhaustive review of every component of the personal/emotional domain. The diversity of components and indicators within this domain (e.g., self-concept, cognition, multiple behavioural indicators, sexuality, mental health, treatment, etc.), precluded an exhaustive treatment of all related constructs. Moreover, given the

specificity of many of the indicators (e.g., manages time poorly), there was not always sufficient empirical work to provide detailed assessments of the criminogenic status for some indicators. However, for the each of the principal components and sub-components we were able to furnish some empirical evidence to support their continued use or recommend their elimination. Where empirical information was limited, we used theoretical judgements to formulate recommendations on the future use of the constructs.

Our review allowed us to make an assessment of the extent to which empirical work had been conducted on the various constructs and the conclusions, sometimes preliminary, that can be gained from this work. In areas that were well researched, we reported on the results of studies that were generally representative of the area. In addition, we attempted to select studies that were based on the best methodologies and attempted to show the diversity of measurement approaches that have been used. Our review of material also placed some emphasis on available research that had been conducted in Canadian contexts and, in particular, focused on federally sentenced offenders. We note a strong Canadian presence in the research on the predictors of criminal behaviour and recidivism within correctional populations.

This review of empirical work has provided an opportunity for conceptual analyses of the content and ordering of constructs within the personal/emotional domain. For example, by examining the empirical literature for some constructs, we were able to suggest reassignments of sub-components or indicators to new categories. These reassignments are likely to result in greater conceptual clarity for reviewing the existing assessment protocol. In a later section of this review we recommend a reordering and simplification of the constructs within the domain to consist of four primary components. While the review furnished some direction regarding the identification of indicators for the assessment, there

remains additional work to initiate in developing a useful and valid set of items to operationalize the constructs.

No report on the results of a literature review would be complete without reference to the limitations of the review and comments about the general quality of empirical work that has been conducted in this area. In any synthesis of research findings from a number of different independent studies, reviewers inevitably refer to the lack of consistency in measurement. This limitation has been an obvious problem for our review. In many cases we had to group together studies using different measures of a particular indicator (e.g., ratings by judges and self-report scales) in order to make an assessment of the predictability of the construct. We also discovered that all too frequently researchers failed to provide an adequate description of the measures they employed to operationalize their constructs. For example, often researchers indicate the method used (e.g., self-report or judge ratings) but omit any description of the content of assessment devices. At other times, even the labels for the constructs are too vague to provide any certainty about the nature of the construct being investigated.

A factor that can limit the generalizability of our findings concerns the diversity of offender sub-samples we have examined. We frequently relied on integration of findings from studies that were based on different sub-samples of offenders. For example, many research samples focused exclusively on juvenile delinquent samples and frequently these studies predicted criterion behaviour that was restricted to the adolescent years. Within the adult offender literature, it was necessary to base our review on a body of literature that contained a disproportionately high number of samples of sex offenders and mentally disordered offenders. We noted that samples based on violent offenders is also a frequent occurrence in this literature.

Another limitation that we have observed concerns the lack of studies that focus specifically on the prediction of recidivism based on personal/emotional need factors. The prediction of recidivism form static indictors within the criminal history domain remain a major focus within the literature. We have also noted that when researchers report on findings regarding personal/emotional need factors and criminal behaviour, personal/emotional constructs are frequently included as components of larger personality batteries. In rarer cases, personal emotional need factors have been the specific focus of follow-up studies. Hence, there remains a need for well designed, thorough investigations of how hypothesized relationships between personal/emotional constructs and recidivism are related.

One of the findings of this review is that much of the measurement activity in the personal/emotional needs domain has occurred within the context of correctional treatment studies. However, often the choice of targets of treatment in this area have not been based on earlier empirical work that justifies the selection of the target as a criminogenic need. For example, researchers have reported on the before and after measurement of particular constructs (e.g., self esteem) within a treatment setting without first showing that the constructs have been associated with criminal or recidivistic behaviour. Assumptions that certain factors are "criminogenic" have sometimes been based on research that simply shows program-related positive changes on personal/emotional factors without any evidence that longer term correctional outcomes have been affected. While good theoretical grounds for selecting personal/emotional needs targets can be identified in some of the treatment studies, frequently we found that authors simply assumed that their readers would understand or "believe in" the wisdom of their chosen targets without any introductory theoretical explanation.

Another related weakness in the body of literature we have reviewed is the paucity of studies that assess presumed relationships between positive changes in needs and recidivistic behaviour. While the entire correctional treatment literature attempts to address the issue of finding the appropriate offender need to address or "change" through interventions, the dynamic predictive nature of need constructs (see Andrews, Bonta and Hoge, 1990) is almost completely ignored. We found very few instances in the prediction literature that tested the predictability of change measures. At the same time, we found a number of studies in which pre-test and post-test measures were used in treatment studies that also incorporated post-treatment follow-ups. However, the usual approach in such studies is to report the pre-test/post-test outcomes and recidivism outcomes as two completely separate foci of investigation. This is unfortunate because tests of the dynamic predictive validity of the pre-test/post-test measures could have been undertaken in many of the studies. However, authors appeared to overlook the theoretical significance of such tests. In order to advance research in the area of criminogenic needs, we would encourage future researchers to give greater attention to demonstrating the dynamic links between need factors and recidivism.

The limitations of the review notwithstanding, we do believe that our literature search activities have allowed us to safely advance some recommendations about the composition of the personal/emotional needs domain. In the table that follows, we summarize the results of the review by referencing each of the indicators included in the current case management assessment protocol. For each indicator we provide an indication of whether we believe the indicator should be retained **(R)** or deleted **(D)** from the current assessment procedure. These recommendations have already been examined in more detail in the narrative summaries for the principal component and sub-components in the body of the report. We also indicate the type of evidence we use to support our recommendation: Empirical **(E)** and Theoretical **(T)**. Finally, the table includes a brief summary comment about each of the indicators we examined.

Summary of Findings and Recommendations by Indicator

Principal Component	Sub-Component	Indicator	Recom-mendation	Evidence	Comment
Self concept	Personal	Feels especially self-important (reassigned to empathy)	R	T	Specific studies were not reviewed. However, evidence from empathy construct may be relevant
		Physical prowess problematic	D	T	Specific studies were not reviewed, however some evidence self-esteem literature is available
		Self Esteem	D	E	New Item with empirical support against conclusion
Cognition	Cognition	Impulsivity	R	E	Strong empirical support for inclusion
		• Manages Time Poorly (reassigned from Behavioural-Coping)	R	T	Specific studies were not reviewed, but impulsivity literature may be relevant
		• Non-Reflective (reassigned from Behavioural-Self-Monitoring)	R	T	Specific studies were not reviewed, but impulsivity literature may be relevant
		• Conscientiousness (reassigned from Behavioural-Conscientiousness)	R	T	Specific studies were not reviewed, but impulsivity literature may be relevant
		General Problem Solving	R	E, T	New item, some empirical evidence and strong theoretical basis for inclusion
		• Unable to recognize problem areas	R	T	Specific studies were not reviewed, but problem-solving literature is relevant
		• Goal setting is unrealistic	R	T	Specific studies were not reviewed, but problem-solving literature is relevant
		• Unable to generate choices	R	T	Specific studies were not reviewed, but problem-solving literature is relevant
		• Unaware of consequences	R	T	Specific studies were not reviewed, but problem-solving literature is relevant
		• Narrow and rigid thinking	R	T	Specific studies were not reviewed, but problem-solving literature is relevant

R – Retain as indicator; D – Delete as indicator; E – Empirical support available; T – Theoretical support.

Principal Component	Sub-Component	Indicator	Recom-mendation	Evidence	Comment
Cognition (Continued)	Cognitive	Interpersonal Problem-Solving	R	E, T	Some empirical evidence and strong theoretical basis for inclusion
		• Poor Conflict Resolution (reassigned from Coping)	R	T	Specific studies were not reviewed, but inter-personal problem-solving literature is relevant
		Empathy	R	E	Strong empirical support for inclusion
		• Self-importance (reassigned from Self-Concept)	R	T	Specific studies were not reviewed, but empathy literature is relevant
		• Disregard for others	R	T	Specific studies were not reviewed, but empathy literature is relevant
		• Socially unaware	R	T	Specific studies were not reviewed, but empathy literature is relevant
		• Incapable of understanding feelings of others	R	T	Specific studies were not reviewed, but empathy literature is relevant
		• Manipulative (reassigned form Behavioural)	R	T	Specific studies were not reviewed, but empathy literature is relevant
Behavioural	Assertion	Assertiveness Skills	R	E, T	Some empirical evidence and strong theoretical basis for inclusion
	Neuroticism		D	E	Empirical support against inclusion
		• Worries	D	E	Empirical support against inclusion
		• Anxiety	D	E	New indicator, empirical support against inclusion
	Aggression		R	E	Empirical support for inclusion
		• Anger (new indicator)	R	E	Empirical support for inclusion
		• Hostility	R	E	Empirical support from anger literature
		• Frustration Tolerance (reassigned from Frustration	R	T	Specific studies were not reviewed, but anger literature is relevant

R – Retain as indicator; D – Delete as indicator; E – Empirical support available; T – Theoretical support.

Principal Component	Sub-Component	Indicator	Recom-mendation	Evidence	Comment
Behavioural (Continued)	Risk-Taking		R	E	Empirical evidence for inclusion
		• Sensation-seeking (Thrill-seeking)	R	E	Empirical evidence for inclusion
		• Gambling (reassigned from Gambling)	R	T	Few empirical studies, but theoretical support for inclusion
	Coping		D	T	Coping is more efficiently covered as indicators within other sub-components
		• Copes with stress poorly	D	T	Indicator is too general for inclusion
		• Poor Conflict Resolution (reassigned to Interpersonal Skills)	R	T	See interpersonal skills above.
		• Manages time poorly (reassigned to Impulsivity)	R	T	See impulsivity above
	Sexual Behaviour				
		• Dysfunction			Sufficient body of literature not available for review
		• Identity			Sufficient body of literature not available for review
		• Preference (e.g., inappropriate)	R	E	Empirical evidence supporting inclusion; more targeted assessment for sex offenders only is recommended
		• Attitudes	R	E	Empirical evidence supporting inclusion; more targeted assessment for sex offenders only is recommended
Mental Ability	Functioning	• Mentally Deficient	D	E	Some empirical support for exclusion
Mental Health	Disordered	• Disordered (past)	D	E	Empirical support against inclusion
		• Disordered (current)	D	T	Sufficient body of literature not available for review, theoretical support for exclusion

R – Retain as indicator; D – Delete as indicator; E – Empirical support available; T – Theoretical support.

Principal Component	Sub-Component	Indicator	Recom-mendation	Evidence	Comment
Interventions	Assessments	• Personal/Emotional	D	T	Sufficient body of literature not available for review, theoretical support for exclusion
	Medication	• Prescribed in past • Prescribed currently	D	T	Sufficient body of literature not available for review, theoretical support for exclusion
	Psychological/ Psychiatric	• Past hospitalization	D	E, T	Some empirical support and theoretical grounds for exclusion
		• Current hospitalization	D	T	Sufficient body of literature not available for review, theoretical support for exclusion
		• Received outpatient services in past	D	T	Sufficient body of literature not available for review, theoretical support for exclusion
		• Receiving outpatient services prior to admission	D	T	Sufficient body of literature not available for review, theoretical support for exclusion
	Programs	• Past programs participation	D	T	Sufficient body of literature not available for review, theoretical support for exclusion
		• Current program participation	D	T	Sufficient body of literature not available for review, theoretical support for exclusion

R – Retain as indicator; D – Delete as indicator; E – Empirical support available; T – Theoretical support.

We have included information about empirical and theoretical support for the retention or deletion of each individual indicator under the "Evidence" column. However, we must provide an additional caveat to the interpretation of this column in the table. Evidence supporting retention of the item does not necessarily imply that the given indicator should be retained in its current form. In most cases, there was only general evidence about the individual indicators which we derived from results presented for the broader sub-components of which the indicators were constituents. As such, the notation of retention (R) means that the indicator is recommended for inclusion in a pool of potential indicators. For example, we believe there is general support for the problem-solving indicator "unaware of consequences". However, we suggest that in its current form the indictor is too general to serve as an item within the problem-solving sub-component. A more useful approach would be to seek information about the contexts in which offenders are unaware of consequences so that the deficit could be linked to more concrete behavioural examples. Accordingly, some of the indicators recommended for retention might be replaced by more appropriate items or revised to achieve greater specificity and clarity for scoring purposes. We return to a discussion of approaches for the selection of indictors later in this section.

Organization of the Personal/Emotional Need Domain

Over the course of reviewing the research on personal/emotional factors it became apparent that some principal components could be removed and the remaining sub-components could be re-organized and relabeled. The reorganization we are recommending is based on a number of criteria:

- Fit between criminogenic need factors and existing categories of program delivery within CSC

- Improved correspondence between general categories within the correctional treatment literature and criminogenic need components

- Realignment of indicators from sub-components which are no longer viewed as conceptually distinct from other sub-components

- Greater conceptual distinctness between sub-components

- Reduction in overlap between principal components (e.g., self-concept, cognitive, and behavioural)

- Greater emphasis on "criminogenic" and "dynamic" status of personal/emotional needs factors

We believe that the personal/emotional needs domain would be best represented by four major principal components: Cognitive, Self-Control, Interpersonal, and Aggression. However, before elaborating on this categorization, we briefly review our justifications for eliminating the following principal components: Self-concept; Behavioural; Mental Ability; Mental Health; Interventions; Sexual Behaviour (Behavioural Sub-component).

As elaborated earlier, one of the major constructs mentioned in discussions of self-concept involves "self-esteem". However, our review suggests that it is unlikely that self-esteem is related to criminal behaviour or recidivism. It is possible to hypothesize that increases in self-esteem may be positively related to recidivism. However, the limited amount of existing research on the question, and the possibility of complex interactions with other characteristics and change factors make it difficult to recommend the assessment of this potentially predictive need factor. In addition, we believe that remaining indicators within this domain (i.e., self-importance), can be more efficiently grouped for assessment and treatment purposes with indicators of empathy.

We believe the existing Behavioural category is too broad to reflect an adequate classification of indicators into meaningful groupings that are relevant to treatment targets. As such, we suggest the reassignment of the behavioural indicators to the four new principal components which we outline below.

Our recommendation of the elimination of the Mental Ability category is based on a lack of clear findings in the research literature regarding the predictability of this component in adult populations. While intellectual ability has been correlated with delinquency, the meta-analytic results based on a number of studies pointed to a weak relationship between "mental ability" constructs and recidivism. Hence, the criminogenic effect of this variable does not appear strong enough to warrant inclusion within the personal/emotional needs dimension. Of course we recognize that as a separate facet of assessment of non-criminogenic needs, mental ability should be assessed in order to identify the needs of the relatively small population of mentally deficient offenders.

Similar arguments can also be made with respect to the need to assess offender Mental Health. While adequate assessment techniques to identify offenders who have mental disorders is obviously necessary, the data suggest that mental disorder is not criminogenic. Hence mental health assessment might be conducted as a separate activity from the personal/emotional need factors that require attention because of their criminogenic nature.

We have argued in the body of the review that there are some conceptual difficulties in including the Intervention category within the personal/emotional needs domain. For example, it has been noted that in some cases interventions (e.g., participation in effective programs) might serve as an indicator of need reduction while in others it may simply signal an elevated need. Overall, it is difficult to assign a "criminogenic" categorization to participation versus non-participation in treatment programs unless the focus and likely outcome of the

programs can be specified with relative certainty. An alternative conceptualization of this principal component would be to assess offender treatment motivation or receptiveness to change. In this respect, treatment variables might be examined in relation to their fit within the "attitudes" domain of the criminogenic needs assessment.

In addition, we also argue for the elimination of the Sexual Behaviour sub-component from the personal/emotional needs domain. This in no way is meant to take away focus from the critical area of sex offender risk assessment. However, in a general population of offenders, it is difficult to assign a criminogenic status to sexual behaviours which are not likely to predict general recidivism. In fact, while such variables (e.g., sexual preference for children) might predict sexual recidivism among sex offenders, when assessed in a general population such factors are likely to be associated with lower recidivism. This "spurious" situation is probable given that sex offenders generally have lower recidivism than non-sex offenders and that inappropriate sexual preference is likely to be unique to the sex offender population. Again, we recommend that assessment of criminogenic factors unique to sex offenders is critical but that it need not be conducted within the context of a general assessment of personal/emotional need factors. It can be argued that assessment of risk and need factors among sex offenders is a highly specialized area which is best conducted by professionals who are trained in the administration and interpretation of sex offender assessment materials. As such, we believe that separation of this area from more general assessments of personal/emotional needs is advisable.

The mental ability, mental health, and sexual behaviour categories are important to the extent that many offenders will have needs that must be addressed within these areas. However, grouping of needs from these areas within the personal/emotional needs domain is likely to suppress the level of

correlation with recidivism and other indicators of post-release adjustment. If it is regarded as crucial to show the needs in these areas along with other criminogenic needs, the indicators for these constructs could be listed as separate domains. Such needs could be labeled under a category such as "additional needs requiring further assessment" or "needs requiring special attention". In this way, needs would be separated from criminogenic needs for which prediction of general recidivism is the primary criteria for need definition.

Four Recommended Principal Components

As noted above, we are recommending 4 principal components for the personal/emotional needs domains. We believe that each of the 4 components, and recommended sub-components, represent relatively distinct constructs which can be easily associated with particular classes of correctional interventions. Below, we list the four domains with their corresponding sub-components.

Cognitive

- *Problem-solving skills*
- *Thinking Styles*

Self-Control

- *Impulsivity*
- *Life Planning Deficits*

Interpersonal Skills

- *Interpersonal Problem-Solving*
- *Empathy*

Aggression

While some overlap between the domains will be apparent, we believe that this grouping of components results in immediate associations with the targets of existing correctional programs. Each principal component is divided into 2 sub-components which greatly simplifies and streamlines the format for measuring the principal components.

The proposed ***Cognitive*** principal domain would be defined by some of the constructs included in the existing "Cognition" sub-component of the needs assessment protocol. We note that "Problem-solving Skills" remains an important sub-component and we also recommend the addition of "Thinking Styles" as the additional sub-component. We refer to the descriptors "narrow/rigid" thinking as well as "concrete versus abstract" thinking as elements of thinking styles. Deficits in these areas may contribute to poor problem-solving and incorrect assumptions about the behaviour of others and the meaning of situations. The content of indicators for these sub-components should be highly cognitive in nature, reflecting the "thinking" processes and skills which must be employed to achieve pro-social choices. Additional work will be required to generate indicators based on concrete behavioural examples of the complex cognitive deficits represented by this principal domain.

The proposed ***Self- Control*** principal component includes "impulsivity", a central construct in the prediction literature, as well as a sub-component concerned with the assessment of deficits in "life planning" skills. While there appears to be a good understanding of the constituents of impulsivity among correctional professionals, the life planning sub-component of self-control will be less familiar. However, an important dimension of self-control, is a tendency to avoid planning and goal setting in various aspects of life. This lack of planning is also characterized by the absence of "pro-active" behaviour. Life planning may be differentiated from impulsive behaviour in that the latter refers to more immediate behavioural outcomes (e.g., failure to think before acting). Lack of

planning, on the other hand, refers to an ongoing failure to anticipate long term needs and outcomes of behaviour.

While it could be argued that deficits related to these two sub-components might frequently occur together, it is also possible to envision offenders who may not exhibit impulsivity but who fail to demonstrate pro-active behaviour. We believe that by identifying a separate self-control construct, a major component with high predictive validity will be established. The use of a separate component to summarize this class of personal/emotional need deficits, also recognizes that there are multiple indicators of impulsive behaviour and that this deficit will not be exhibited in the same way by all offenders. We believe that the self-control construct will be understood by staff who must conduct offender assessments.

We believe that the proposed principal domain of ***Interpersonal Skills*** reflects a critical need for intervention for many offenders. Content for this area is underrepresented in the current criminogenic needs assessment area. However, many programs have a specific focus on teaching offenders the social skills needed (e.g., see Goldstein, 1986) to effectively relate to others in a variety of social situations. The empirical evidence and theoretical support for interpersonal skills as a criminogenic need are also impressive. The sub-components proposed for this component are relatively straight forward: *Interpersonal Problem-Solving* and *Empathy*. The sub-component referring to interpersonal problem-solving refers to the inability of many offenders to resolve conflict and effectively negotiate with others regarding desired outcomes. Empathy, on the other hand, is more concerned with an attitudinal stance in relation to others as opposed to a skill deficit. Lack of empathy is reflected in decisions marked by a lack of concern for the needs and desires of others.

The principal component concerned with ***Aggression*** is based on very strong empirical evidence that indicators of aggressive behaviour are important predictors of future criminal offending, particularly violent offending. As such, the indicators used in this principal component are likely to identify so-called "persistently" violent offenders. Given the empirical status of this criminogenic need area and its high face validity, this principal domain will be easily understood by assessment and program delivery staff who are tasked with identifying offenders who have difficulties associated with control of aggressive behaviour. We recommend the inclusion of two sub-components: *Aggression Proneness* and *Anger*. Aggression proneness refers to a tendency to exhibit aggressive (including physical violence) responses to a variety of situations. The anger sub-component, on the other hand, refers to the frequent experience of the emotion of anger which results in ongoing hostility and anger reactions toward others.

One of the advantages of the division of the personal/emotional need dimension into the 4 principal components being proposed is that scoring for empirical validation of the scales will become more straightforward. With the existing organization of the personal/emotional domain, a high proportion of offenders are identified as having problems. However, using the current rating approaches (i.e., any problem) it is difficult to present a profile of the nature of problems being identified for this population. We believe that scoring of the personal/emotional domain along the 4 proposed components will yield sub-scales with high internal consistency and predictive validity.

Selection of Indicators

Some of the existing indicators for the personal/emotional domain may be useful in operationalizing the principal components and sub-components we have proposed above. However, we also recognize that more effort is required to refine existing indicators and generate additional indicators and corresponding

scoring instructions to bolster the validity of the domain. We believe that many of the current indicators are overly general to cover the multiple elements involved in the broader principal components. For example, there is some concern that over-generality of indicators will produce hasty assessment decisions for many offenders. One of the problems that could occur is an over-identification of the number of offenders who have deficits within the domain. A possible solution to this problem is to increase the specificity of the indicators by providing assessment staff with sufficient prompts or cues that allow them to conduct a more rigorous assessment of the sub-components.

An important consideration in selecting and refining the indicators for the sub-components within the 4 principal components is the nature of the assessment setting in which they will be employed. The current assessment protocol is administered by case management officers based on their integration of various sources of information about the offenders. We feel that many of the current indicators could be refined in a manner that takes into account the nature of the information sources currently available to case management officers.

Much of the research on the personal/emotional need indicators we have reviewed was based on self-report measures. However, in the correctional assessment context, case management officers must provide ratings of the various need areas based on information contained in case files as well as information supplied by the offenders. However, we argue, and certainly the research on risk/needs assessment technology provides confirmation, that the various constructs can be validly and reliably assessed using case management ratings. What is required for some of the indicators is more precise definition of the items to reduce the level of ambiguity for some difficult constructs (e.g., rigid thinking), thereby simplify the tasks of those conducting the assessments.

A recent approach described by Prentky (Prentky et. al., 1995) and his colleagues is illustrative of the quality of ratings that can be attained for complex constructs. These researchers developed rating scales to be applied for file reviews aimed at measuring impulsivity in sex offenders. While impulsivity is a difficult construct to measure, they demonstrated that high agreement on the presence or absence of impulsivity could be reached by coders who were working with case file information. A critical feature of the approach they used was to break down the component of impulsivity into various "lifestyle" dimensions in which impulsive behaviour could be manifested (e.g., employment, school, relationships with peers, context of criminal offending, etc.). Using concrete examples of behavioural "occasions" for acting impulsively, Prentky's research team was able to develop highly predictive ratings of impulsive behaviour. As outlined earlier in our review of their study, using the file-based impulsivity ratings they were able to show impressive differences in probability of reoffending for different classes of criminal behaviour.

The use of indicators based on examinations of behaviour within various lifestyle categories could also be applied to the various indicators within the cognitive, self-control, inter-personal, and aggression components described above. We believe that highly reliable and valid indicators could be developed to measure the personal/emotional need indicators by prompting case managers to examine various "life" contexts of offenders. The source of information on the life contexts could include criminal history information, social history data, and institutional behaviour. A series of "prompts" or "cues" could be generated for use by case managers in conducting semi-structured interviews with offenders. We would argue that the "life context" measurement strategy could also be extended to other domains within the criminogenic need assessment.

To illustrate the approach the example of the *impulsivity* sub-component will be used. Some potential indicators of impulsivity are "makes quick decision",

"chooses immediate rewards", and "fails to stop and think before acting". While there would be little disagreement among correctional professionals and researchers that such items are good indicators of impulsivity, the items remain too general to promote valid assessment. For example, the generality might result in over-estimating the extent of impulsive behaviour in some offenders, while failing to identify impulsivity in other subjects. The solution is a series of prompts which force the assessor to search for these examples of impulsivity based on past or current behavioural examples. Hence, in rating the item "makes quick decisions" the assessor would be provided with prompts for identifying examples of how a given offender may have executed "quick decisions" in a variety of life contexts in the past. In a similar fashion, prompts or cues would also be needed to promote a more thorough assessment of the "chooses immediate rewards" and "fails to stop and think before acting" indicators.

The selection and definition of indicators would be the first step in developing and refining the measurement of the personal/emotional domain. Following the identification of indicators, a series of examples of how particular behavioural indicators could be manifested in various life contexts (e.g., family, education, employment, peers, criminal activity, supervision, and institutional life) would be generated. This would include suggested prompts for reviewing case files and cues for conducting semi-structured interviewing of offenders.

A next step in the indicator development process would be to collect information from case management officers to determine the appropriateness of the proposed measurement techniques. This would involve an assessment of the extent to which case managers have access to information of sufficient detail to provide reliable measurement of the indicators being proposed. An empirical measurement approach could be used to assess the suitability of items based on case managers' judgements. For example, case managers could rate the

appropriateness of the indicator and evaluate the likely reliability of measuring the item using available sources (e.g., file, observation, offenders self-report). Allowing case managers' input into the design process will also help establish consensus for any new measurement approach. The final stage would be to assess the predictive validity of the criminogenic need indicators in the context of a post-release follow-up study.

In proposing an approach for the development of indicators for personal/emotional need indicators we recognized that the constructs are often considerably complex and there are inherent difficulties involved in their operationalization. While indicators for some domains refer to relatively objective sources (e.g., employment history, education, substance use, accommodation, health, etc.), indicators in the personal/emotional need domain are generally based on more subjective sources. Assessment of the personal/emotional needs components involve judgements about personality and behavioural dispositions which are normally assessed through rigorous psychological testing. As such, it is crucial that staff who assess components within this domain have access to appropriate sources of information that permit valid assessment. In addition, staff need assessment techniques (e.g., tools, aides, probing methods) that allow them to make reliable and valid judgements about available information.

The approach to the development of personal/emotional need indicators we are proposing is also based on the belief that the personal/emotional domain is critical with respect to correctional interventions. There are many programs available to address needs in this domain and many offenders are selected as candidates for programming in the various sub-components. Again, the generality contained in the current personal/emotional indicators may lead to overestimation of the level of needs in this area. Alternatively, lack of specificity of indicators may result in failure to adequately

quantify the level of needs for some individuals. Failure to accurately assess need levels will prevent effective selection of offenders who should be given priority access to scarce program resources. We believe that greater attention to the contexts in which personal/emotional needs are manifested would add significant value to the need assessment enterprise.

REFERENCES

Andrews, D. A., Zinger, I., Hoge, R. D., Bonta, J., Gendreau, P. & Cullen, F. T. (1990). Does correctional treatment work? A clinically relevant and psychologically informed meta-analysis. Criminology, 28, 369-404.

Andrews, D.A., & Bonta, J. (1994). The Psychology of Criminal Conduct. Anderson Publishing Co: Cincinnati.

Andrews, D.A., Bonta, J., & Hoge, R.D. (1990). Classification for effective rehabilitation: Rediscovering psychology. Criminal Justice and Behavior, 17(1), 19-52.

Andrews, D.A., Kiessling, J.J., Mickus, S., & Robinson, D. (1986). The construct validity of interview-based risk assessment in corrections. Canadian Journal of Behavioural Science, 18(4), 460-470.

Annis, H.M., & Chan, D. (1983). The differential treatment model: Empirical evidence from a personality typology of adult offenders. Criminal Justice and Behavior, 10(2), 159-173.

Arbuthnot, J., & Gordon, D.A. (1986). Behavioral and cognitive effects of a moral reasoning development intervention for high-risk behavior-disordered adolescents. Journal of Consulting and Clinical Psychology, 34(2), 208-216.

Bayer, B.M., Bonta, J.L., & Motiuk, L.L. (1985). The PD subscales: An empirical evaluation. Journal of Clinical Psychology, 41, 780-788.

Beidleman, W.B. (1981). Group assertive training in correctional settings: A review and methodological critique. Journal of Offender Counseling, Services and Rehabilitation, 6(12), 69-87.

Bennett, L.A. (1974). Self esteem and parole adjustment. Criminology, 12, 346-363.

Blanchette, K.D., & Motiuk, L.L. (1996). Female offenders with and without major mental health problems: A comparative investigation. Report No. 46, Research Division, Correctional Service Canada.

Block, J. (1993). On the relation between IQ, impulsivity, and delinquency: Remarks on the Lynam, Moffitt, and Southamer Loeber (1993) interpretation. Journal of Abnormal Psychology, 104(2), 395-398.

Bonta, J.L., Law, M., & Hanson, K. (1997 in press). The predication of criminal and violent recidivism among mentally disordered offenders: A meta-analysis. Psychological Bulletin.

Bryson, J.S., & Groves, D.L. (1987). Correctional recreation and the self esteem of prison inmates. Psychology and Human Development, 2(2), 89-101.

Buss, A.H., & Durkee, A. (1957). An inventory for assessing different kinds of hostility. Journal of Consulting Psychology, 21(4), 343-349.

Bynner, J.M., O'Malley, P.M., & Bachman, J.G. (1981). Self esteem and delinquency revisited. Journal of Youth and Adolescence, 10(6), 407-441.

Carlston, M., Marcus-Newhall, A., & Miller, N. (1989). Evidence for a general construct of aggression. Personality and Social Psychology Bulletin, 15(3), 377-389.

Cheek, F.E., & Baker, J.C. (1977). Self control training for inmates. Psychological Reports, 41(2), 559-568.

Cherek, D.R., Moeller, F,G., Dougherty., D.M., & Rhoades, H. (1997). Studies of violent and nonviolent male parolees: II. Laboratory and psychometric measurements of impulsivity. Biological Psychiatry, 41(5), 523-529.

Dahlback, O. (1990). Criminality and risk taking. Personality and Individual Differences, 11(3), 265-272.

DeJong, J., Virkkunen, M., & Linnoila, M. (1992). Nervous and mental disease: Factors associated with recidivism in a criminal population. Journal of Nervous and Mental Disease, 180(9), 543-550.

Dishion, T. J., Loeber, R., Stouthamer Loeber, M., & Patterson, G. R. (1984). Skill deficits and male adolescent delinquency. Journal of Abnormal Child Psychology, 12(1), 37-53.

Dodge, K.A., & Frame, C.L. (1982). Social cognitive biases and deficits in aggressive boys. Child Development, 53(2), 620-635.

Ellis, P.L. (1982). Empathy: A factor in antisocial behavior. Journal of Abnormal Child Psychology, 10(1), 123-133.

Eysenck, S.B., & McGurk, B.J. (1980). Impulsiveness and venturesomeness in a detention center population. Psychological Reports, 47(3), 1299-1306.

Eysenck, S.B.G., Pearson, P.R., Easting, G., & Allsopp, J.F. (1985). Age norms for impulsiveness, venturesomeness and empathy in adults. Personality and Individual Differences, 6(5), 613-619.

Field, G. (1985). The Cornerstone Program: A client outcome study. Federal Probation, 49(2), 50-55.

Field, G. (1986). The psychological deficits and treatment needs of chronic criminality. Federal Probation, 50(4), 60-66.

Furnham, A., & Saipe, J. (1993). Personality correlates of convicted drivers. Personality and Individual Differences, 14(2), 329-336.

Gendreau, P., Grant, B.A., & Leipciger, M. (1979). Self esteem, incarceration and recidivism. Criminal Justice and Behavior, 6(1), 67-75.

Gendreau, P., Little, T., & Goggin, C. (1996). A meta-analysis of the predictors of adult offender recidivism: What works!. Criminology, 34(4), 575-607.

Goldstein, A. (1986). Psychological skill training and the aggressive adolescent. In S. Apter & A. Goldstein (Eds.), Youth Violence: Program and Prospects. New York: Pergamon.

Guerra, N.G., & Slaby, R.G. (1990). Cognitive mediators of aggression in adolescent offenders: II. Intervention. Developmental Psychology, 26(2), 269-277.

Guerra, N.G., & Slaby, R.G. (1990). Cognitive mediators of aggression in adolescent offenders: 2. Intervention. Developmental Psychology, 26(2), 269-277.

Hains, A.A., & Herrman, L.P. (1989). Social cognitive skills and behavioural adjustment of delinquent adolescents in treatment. Journal of Adolescence, 12(3), 323-328.

Hanson, K. & Bussière, M. T. (1996). Predictors of Sexual Recidivism: A Meta-Analysis. Ottawa: Solicitor General Canada.

Hanson, R.K., Gizzarelli, R., & Scott, H. (1994). The attitudes of incest offenders: Sexual entitlement and acceptance of sex with children. Criminal Justice and Behavior, 21(2), 187-202.

Heilbrun, A.B., Heilbrun, L.C., & Heilbrun, K.L. (1978). Impulsive and premeditated homicide: An analysis of subsequent parole risk of the murderer. Journal of Criminal Law and Criminology, 69(1), 108-114.

Henderson, M. (1983). Self reported assertion and aggression among violent offenders with high or low levels of overcontrolled hostility. Personality and Individual Differences, 4(1), 113-115.

Henderson, M. (1986). An empirical typology of violent incidents reported by prison inmates with convictions for violence. Aggressive Behavior, 12(1), 21-32.

Hernandez, S.K., & Mauger, P.A. (1980). Assertiveness, aggressiveness and Eysenck's personality variables. Personality and Individual Differences, 1(2), 143-149.

Hoppe, C.M., & Singer, R.D. (1977). Interpersonal violence and its relationship to some personality measures. Aggressive Behavior, 3(3), 261-270.

Hoppe; CM., & Singer, R.D. (1976). Overcontrolled hostility, empathy, and egocentric balance in violent and nonviolent psychiatric offenders. Psychological Reports, 39(3), 1303-1308.

Horvath, P., & Zuckerman, M. (1993). Sensation seeking, risk appraisal, and risky behavior. Personality and Individual Differences, 14(1), 41-52.

Hughes, G.V. (1993). Anger management program outcomes. Research on Offender Programming Issues, 5(1), 5-9.

Hunter, D. (1993). Anger management in the prison: An evaluation. Research on Offender Programming Issues, 5(1), 3-5.

Ingram, J.C., Dixon, D.N., & Glover, J.A. (1983). Problem solving as a function of race and incarceration. Journal of Social Psychology, 120(1), 83-90.

Ivanoff, A., Smyth, N.J., Grochowski, S., & Jang, S.J., et al. (1992). Problem solving and suicidality among prison inmates: Another look at state versus trait. Journal of Consulting & Clinical Psychology, 60(6), 970-973.

Janoka, C., & Scheckenbach, A. (1978). Empathy training with inmates and staff utilizing the Carkhuff model. Corrective and Social Psychiatry and Journal of Behavior Technology, Methods and Therapy, 24(1), 6-12.

Kaplan, M.S., Becker, J.V., Tenke, C.E. (1991). Assessment of sexual knowledge and attitudes in an adolescent sex offender population. Journal of Sex Education and Therapy, 17(3), 217-225.

Kaplan, P.J., & Arbuthnot, J. (1985). Affective empathy and cognitive role taking in delinquent and nondelinquent youth. Adolescence, 20(78), 323-333.

Karoly, P. (1975). Comparison of "psychological styles" in delinquent and nondelinquent females. Psychological Reports, 36(2), 567-570.

Keltner, A., Scharf, N., & Schell, R. (1978). The assessment and training of assertive skills with sexual offenders. Corrective and Social Psychiatry and Journal of Behavior Technology, Methods and Therapy, 24(2), 88-92.

Keltner, A.A., Marshall, P., & Marshall, W.L. (1981). The description of assertiveness in a prison population. Corrective and Social Psychiatry and Journal of Behavior Technology, Methods and Therapy, 27(1), 41-47.

Kroner, D.G., & Reddon, J.R. (1992). The Anger Expression Scale and State-Trait Anger Scale: Stability, reliability, and factor structure in an inmate sample. Criminal Justice and Behavior, 19(4), 397-408.

Kroner, D.G., Reddon, J.R., & Serin, R.C. (1992). The Multidimensional Anger Inventory: Reliability and factor structure in an inmate sample. Educational and Psychological Measurement, 52(3), 687-693.

Kroner, D.G., Reddon, J.R., & Serin, R.C. (1992). The Multidimensional Anger Inventory: Reliability and factor structure in an inmate sample. Educational and Psychological Measurement, 52(3), 687-693.

Krueger, R.F., Schmutte, P.S., Caspi, A., Moffitt, T.E., et al. (1994). Personality traits are linked to crime among men and women: Evidence from a birth cohort. Journal of Abnormal Psychology, 103(2), 328-338.

Lazarus, R. S. (1966). Psychological Stress and the Coping Process. New York: McGraw-Hill.

Leak, G.K. (1980). Effects of highly structured versus nondirective group counseling approaches on personality and behavioral measures of adjustment in incarcerated felons. Journal of Counseling Psychology, 27(5), 520-523.

LeBlanc, M., Cote, G., & Loeber, R. (1991). Temporal paths in delinquency: Stability, regression, and progression analyzed with panel data from an adolescent and a delinquent male sample. Canadian Journal of Criminology, 23-44.

Lee, J., K. P., Proeve, M.J., Lancaster, M., & Jackson, H.J. (1996). An evaluation and 1 year follow up study of a community based treatment program for sex offenders. Australian Psychologist, 31(2), 147-152.

Lindgren, S.D., Harper, D.C., Richman, L.C., & Stehbens, J.A. (1986). "Mental imbalance" and the prediction of recurrent delinquent behavior. Journal of Clinical Psychology, 42(5), 821-825.

Lipsey, M. W. (1995). What do we learn form 400 research studies on the effectiveness of treatment with juvenile delinquents. In J. McGuire (Eds.), What works: Reducing Reoffending. Chichester; John Wiley & Sons.

Lipton, D. S., Pearson, F. S., Cleland, C. & Yee, D. (1998). How Do Cognitive Skills Training Programs for Offenders Compare with Other Modalities: A Meta-Analytic Perspective. Presented at the Stop and Think Conference, Her Majesty's Prison Service, York, Great Britain.

Lochman, J.E. (1992). Cognitive-behavioral intervention with aggressive boys: Three-year follow-up and preventive effects. Journal of Consulting and Clinical Psychology, 60(3), 426-432.

Lochman, J.E., (1992). Cognitive-behavioral intervention with aggressive boys: Three-year follow-up and preventive effects. Journal of Consulting and Clinical Psychology, 60(3), 426-432.

Loeber, R. (1987). The prevalence, correlates, and continuity of serious conduct problems in elementary school children. Criminology, 25(3), 615-642.

Loeber, R., & Dishion, T. (1983). Early predictors of male delinquency: A review. Psychological Bulletin, 94(1), 68-99.

MacDevitt, J.W., & Sanislow, C. (1987). Curative factors in offenders' groups. Small Group Behavior, 18(1), 72-81.

Maiuro, R.D., Vitaliano, P.P., & Cahn, T.S. (1987). A brief measure for the assessment of anger and aggression. Journal of Interpersonal Violence, 2(2), 166-178.

Marcus, R.F. (1996). The friendships of delinquents. Adolescence, 31(121), 145-158.

Marshall, P.G., Keltner, A.A., & Marshall, W.L. (1981). Anxiety reduction, assertive training, and enactment of consequences: A comparative treatment study in the modification of nonassertion and social fear. Behavior Modification, 5(1), 85-102.

Marshall, W. L. (1993). The role of attachments, intimacy, and loneliness in the etiology and maintenance of sexual offending. Special Issue: Paraphilias. Sexual and Marital Therapy, 8(2), 109-121.

Marshall, W. L., Turner, B. A., & Barbaree, H. E. (1989). An evaluation of life skills training for penitentiary inmates. Journal of Offender Counseling, Services and Rehabilitation, 14(2), 41-59.

Mathur, S.R., & Rutherford, R.B. (1994). Teaching conversational social skills to delinquent youth. Behavioral Disorders, 19(4), 294-305.

McGurk, B.J., Bolton, N., & Smith, M. (1978). Some psychological, educational and criminological variables related to recidivism in delinquent boys. British Journal of Social and Clinical Psychology, 17(3), 251-254.

Motiuk, L. L. & Brown, S. L. (1993). The Validity of Offender Needs Identification and Analysis in Community Corrections. Research Report No. 34, Research Branch, Correctional Service Canada. Ottawa: Correctional Service Canada.

Motiuk, L. L. & Brown, S. L. (1996). Factors Related to Recidivism among Released Federal Sex Offenders. Research Report No. 49, Research Branch, Correctional Service Canada. Ottawa: Correctional Service Canada.

Motiuk, L.L. (1997). Classification for correctional programming: The Offender Intake Assessment (OIA) process. Forum on Corrections Research, 9(1), 18-22.

Motiuk, L.L., & Brown, S.L. (1994). Offender needs identification and analysis in community corrections. Forum on Corrections Research, 6(3), 14-16.

Motiuk, L.L., & Porporino, F.J. (1991). The prevalence, nature and severity of mental health problems among federal male inmates in Canadian penitentiaries. Report No. 24, Research and Statistics Branch, Correctional Service Canada.

Mullen, J.M., & Reinehr, R.C. (1982). Predicting dangerousness of maximum security forensic mental patients. Journal of Psychiatry and Law, 10(2), 223-231.

Osuna, E., & Luna, A. (1993). Psychological traits and criminal profiles. Medicine and Law, 12(12), 171-180.

Pithers, W.D. (1994). Process evaluation of a group therapy component designed to enhance sex offenders' empathy for sexual abuse survivors. Behaviour Research and Therapy, 32(5), 565-570.

Porporino, F.J., & Motiuk, L.L. (1995). The prisons careers of mentally disordered offenders. International Journal of Law and Psychiatry, 18(1), 29-44.

Prentky, R.A., Knight, R.A., Lee, A.F.S., & Cerce, D.D. (1995). Predictive validity of lifestyle impulsivity for rapists. Criminal Justice and Behavior, 22(2), 106-128.

Pugh, D.N. (1993). The effects of problem-solving ability and locus of control on prisoner adjustment. International Journal of Offender Therapy and Comparative Criminology, 37(2), 163-176.

Putnins, A.L. (1982). The Esyenck Personality questionnaires and delinquency prediction. Personality and Individual Differences, 3, 339-340.

Quinsey, V.L., Maguire, A., & Varney, G.W. (1983). Assertion and overcontrolled hostility among mentally disordered murderers. Journal of Consulting and Clinical Psychology, 51(4), 550-556.

Renwick, S, & Emler, N. (1991). Th relationship between social skills deficits and juvenile delinquency. British Journal of Clinical Psychology, 30(1), 61-71.

Rice, M.E., & Harris, G.T. (1996). Predicting the recidivism of mentally disordered firesetters. Journal of Interpersonal Violence, 11(3), 364-375.

Ross, R.R., & Fabiano, E.A. (1985). Time to Think. A cognitive model of delinquency prevention and offender rehabilitation. Johnson City: Tennessee.

Saunders, G. R., & Davies, M. B. (1976). The validity of the Jesness Inventory with British delinquents. British Journal of Social and Clinical Psychology, 15(1), 33-39.

Saunders, G.R., & Davies, M.B. (1976). The validity of the Jesness Inventory with British delinquents. British Journal of Social and Clinical Psychology, 15(1), 33-39.

Scully, D. (1988). Convicted rapists' perceptions of self and victim: Role taking and emotions. Gender and Society, 2(2), 200-213.

Segal, Z.V., Marshall, W.L. (1985). Heterosexual social skills in a population of rapists and child molesters. Journal of Consulting and Clinical Psychology, 53(1), 55-63.

Segal, Zindel V., & Marshall, W.L. (1985). Self report and behavioral assertion in two groups of sexual offenders. Journal of Behavior Therapy and Experimental Psychiatry, 16(3), 223-229.

Selby, M.J. (1984). Assessment of violence potential using measures of anger, hostility, and social desirability. Journal of Personality Assessment, 48(5), 531-545.

Serin, R.C. (1991). Psychopathy and violence in criminals. Journal of Interpersonal Violence, 6(4), 423-431.

Serin, R.C., & Kuriychuk, M. (1994). Social and cognitive processing deficits in violent offenders: Implications for treatment. International Journal of Law and Psychiatry, 17(4), 431-441.

Serin, R.C., Peters, R.D., & Barbaree, H.E. (1988). Predictors of psychopathy and release outcome in a criminal population. Psychological Assessment, 2(4), 419-422.

Shivrattan, J.L. (1988). Social interactional training and incarcerated juvenile delinquents. Canadian Journal of Criminology, 30(2), 145-163.

Sinclair, I. A., Shaw, M. J., & Troop, J. (1974). The relationship between introversion and response to casework in a prison setting. British Journal of Social and Clinical Psychology, 13(1), 51-60.

Smith, W.R., & Monastersky, C. (1986). Assessing juvenile sexual offenders' risk for reoffending. Criminal Justice and Behavior, 13(2), 115-140.

Spence, S.H., & Marzillier, John S. (1981). Social skills training with adolescent male offenders: II. Short term, long term and generalized effects. Behaviour Research and Therapy, 19(4), 349-368.

Stanford, M.S., & Barratt, E.S. (1992). Impulsivity and the multi impulsive personality disorder. Personality and Individual Differences, 13(7), 831-834.

Templer, D.I., Kaiser, G., & Siscoe, K. (1993). Correlates of pathological gambling propensity in prison inmates. Comprehensive Psychiatry, 34(5), 347-351.

Teplin, L.A., Abram, K,M., & McClelland, G.M. (1994). Does psychiatric disorder predict violent crime among released jail detainees? A six-year longitudinal study. American Psychologist, 49(4), 335-342.

Thornton, D. (1985). Rate of offending, risk evaluation and risk preference. Personality and Individual Differences, 6(1), 127-128.

Valliant, P.M., & Antonowicz, D.H. (1991). Cognitive behaviour therapy and social skills training improves personality and cognition in incarcerated offenders. Psychological Reports, 68, 27-33.

Van Voorhis, P. (1985). The utility of Kohlberg's theory of moral development among adult probationers in a restitution field setting. Genetic, Social and General Psychology Monographs, 111(1), 101-126.

Viemero,V. (1996). Factors in childhood that predict later criminal behavior. Aggressive Behavior, 22(2), 87-97.

Vitaro, F., Ladouceur, R., & Bujold, A. (1996). Predictive and concurrent correlates of gambling in early adolescent boys. Journal of Early Adolescence, 16(2), 211-228.

Waldie, K., & Spreen, O. (1993). The relationship between learning disabilities and persisting delinquency. Journal of Learning Disabilities, 26(6), 417-423.

Welsh, W.N., & Gordon, A. (1991). Cognitive mediators of aggression: Test of a causal model. Criminal Justice and Behavior, 18(2), 125-145.

Whalley, L.J., & McGuire, R.J. (1978). Measuring sexual attitudes. Acta Psychiatrica Scandinavica, 58(4), 299-314.

Zamble, E. & Porporino, F. (1988). Coping, behaviour, and adaptation in prison inmates. New York: Springer.

Zamble, E., & Porporino, F. (1990). Coping, imprisonment, and rehabilitation: Some data and their implications. Criminal Justice and Behaviour, 17, 53-70.

Zamble, E., & Quinsey, V.L. (1991). Dynamic and Behavioral Antecedents to Recidivism: A Retrospective Analysis. Report No. 17, Ottawa: Research Branch, Correctional Services Canada.

Zarb, J.M. (1978). Correlates of recidivism and social adjustment among training school delinquents. Canadian Journal of Behavioural Science, 10(4), 317-328.